California State Journal of Medicine.

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VOL. XII MARCH, 1914. No. 3

EDITORIAL NOTES

WHAT IS THE VALUE OF ANYTHING?

A very great objection to the schedule of fees offered by the associated insurance companies for the services of physicians under the new insurance and compensation act, is the fixing of a flat fee. Fees for professional work cannot be absolutely fixed; as a matter of fact, the value of everything is relative and the old saying of "charging what the traffic will bear" is fundamentally true and right. The freight rate on silk is more per ton than that on pig iron; a lawyer gets a bigger fee for incorporating a fifty million dollar concern than for a thousand dollar company; a surgeon is entitled to a larger fee for removing the appendix of a millionaire than for taking out that of a car conductor. Some of our best surgeons have a system of charging that is based upon the income of the individual and represents one or more month's income for the work to be done, and this seems to be a reasonable and equitable way of fixing the fee. It is foolish for any one to say that it is as much work and strain and responsibility in the case of the poor man as in that of the rich man. Just as much coal is burned in hauling a ton of silk as in pulling a ton of pig iron over a certain distance. Therefore, the contracting to do certain professional work for certain fixed fees, irrespective of the income of the patient, is fundamentally wrong and vicious.

SQUEEZING THE COMPANIES.

Dr. French read a paper on the subject of industrial compensation, insurance, etc., before the Los Angeles County Medical Association and, in the main, took the attitude voiced in your JOURNAL in connection therewith. One point he brought up, however, is new in so far as it has not been mentioned in these pages; that is, the fact that some physicians will try to make the bill unduly large if they know that an insurance company of large capital is going to pay out the money. Probably that is, in a few cases, true. Physicians are average men and probably have but a little more than the average rate of honesty; in every walk of life and in every calling we shall find rascals and dishonest men; occasionally one reads of some clergyman who has been detected leading an immoral or a dissolute life, but because of that we do not condemn all clergy nor do we think of them as all being dissolute. Every practicing physician does a great deal of work for nothing, and the very nature of his calling leads him to try to think more honestly than does the daily occupation of the average man in any other calling; therefore we truly believe that physicians are to some extent more honest in the average than those in other walks of life. But even at that there will be some cases of attempted grafting, no matter what is done. The plan presented in this issue and strongly recommended to county medical societies for their consideration, will, we think, do away with the charge of possible graft. Still, it seems to be a peculiar phase of human nature that every one must try to get "something for nothing," particularly when it is a corporation that is to be depleted. People who would never put a hand in an individual pocket, will avoid paying car-fare if they can, and we all know the predatory instinct that removes things from hotels! Doubtless many physicians who would be perfectly honest with an individual patient would not think it wrong to try to "stick" a corporation. It is a queer people!

A SUGGESTION ABOUT FEES.

Why not carefully consider and present to the various insurance companies a proposition something like the following; it will not only do away with the wrong idea of fixed, flat fees, but it will also do away with the serious harm to a number of physicians which is a result of forcing a certain company physician upon all patients covered by that company. Let the injured person have the attention of any member of the county medical society who will agree to make his charges commensurate with the income of the patient and not try to fix them according to the capital stock of the insurance company. In the event of a dispute

arising between a member of the society and an insurance company, turn the matter over to the county medical society for adjustment. It is more than possible that some physicians would make unfair and too large charges, but it is hardly imaginable that a county society would do anything out of the way or unjust and would not allow an account to be approved if it were obviously too large or dishonest or not commensurate with the income of the patient. This matter has been discussed with the managers of several insurance companies and is entirely satisfactory to them; if it is satisfactory to the various county units and if they will undertake to make the proposition to the insurance companies, doubtless nearly if not quite all of them will be glad to adopt it. One plan that is being followed by at least some of the companies, is exceedingly bad. They contract with one physician to handle all of the work in the state at a fixed amount and he pays local doctors—as little as he can get them to agree to take! Los Angeles has acted wisely in condemning this practice and the Council of that Association has adopted very clear resolutions setting forth their stand in the matter, which resolutions appear elsewhere in these pages.

IMPORTANT BUSINESS.

Not in the last twenty years have so many questions of vital importance to the medical profession and to the members of our society presented themselves as at the present time. They will come up for discussion and for action at the annual meeting next month, and every county society should be represented and every delegate in his place on the night of April 14th (Tuesday) at the Hotel Potter, Santa Barbara. Attacks upon medical men in the form of suits for alleged malpractice have increased enormously and reached serious proportions. Not one such suit was justified and not one was lost by us during the past year. Nor do our attorneys fear that such suits will go against us or be held to stand on appeal. But they cost money and time and trouble to defend, and if they are not carefully studied and defended, and verdicts allowed to go against physicians, there will be a perfect deluge of such actions and our profession will be mulcted of many thousands of dollars. Then we shall have the question of fees under this insurance act and the manner in which practice is diverted, together with the relation of this cheap work to subsequent malpractice suits which the society will have to defend, a most serious question. Should a member who signs this fee contract be allowed to keep his membership, and if he is, should he be defended by the society in case of a suit arising from such work? Do not fail to be at the meeting and let each county unit see to it that it elects delegates who will surely attend. What construction shall be put upon the income tax and how will it affect our relations with our patients? Shall we notify them that the law requires us to sue for an account in order to prove that it is bad? Shall we establish a credit department in connection with the work of the State Society? There are certainly plenty of very important questions for the House of Delegates to consider.

TUBERCULOSIS; A ROUSING MEETING!

In the advertising pages of this issue will be found a page devoted to some remarks about the tuberculosis situation that are important to all of us and that should be read by all. At the next meeting, Santa Barbara, Thursday, April 16th, the whole day will be devoted to a series of papers by distinguished men dealing with the tuberculosis question. This meeting is arranged by the California Association for the Study and Prevention of Tuberculosis, and it is hoped that it will put new and enthusiastic life into that association and into the members of our society in their relations with the association. Look over the program as published herein.

"WHISPER HIM TO DEATH."

A school teacher in Alameda was charged with misbehavior with girl pupils; there was a thorough investigation and the charge was found to be absolutely groundless. Concerning the matter the San Francisco *Examiner* had this to say: "There was absolutely nothing in the charges, which seem to have been the sole work of a mischief-making and meddlesome female politician, but Principal Cohn will suffer more or less from the undeserved stigma anyhow. Malice finds no accusation so easy to bring and innocence no accusation so hard to dispute as is an accusation of sexual wrongdoing. There are always plenty of evil minds ready to believe the worst imputations of this kind, though made by the meanest malice and with no jot or tittle of truthfulness." The *Examiner* might have gone on and said that the very people who take a delight in circulating such unfounded and dastardly stories know all the time that the stuff they talk and distribute is nothing but lies, lies from beginning to end. Many a man has been ruined by just that sort of thing; a few survive a good deal of it and come out, after the years have gone by, stronger and bigger than they would have been. It is nearly always impossible to find the originator of these whisperings, and so there is nothing to be done in the way of fighting back; to walk straight, look every one in the eye and wait for time to make some of the whisperers ashamed of themselves, is about all the victim can do. Some years ago a physician in this State was completely ruined in this dastardly fashion; more recently it was tried on a prominent physician in a southern city, but he survived, as did two physicians in San Francisco who were also made the objects of such malicious attack. There are no words of contempt too strong to be applied to those who are so loathsome as to pass on this sort of thing; man is the only animal that can become so degraded as to fight in this way.

THE INCOME TAX MUDDLE.

Under the term "Instructions" we read that "Persons receiving fees or emoluments for professional services, as in the case of physicians or lawyers, should include all actual receipts for services rendered in the year for which return is made, *together with all unpaid accounts,* charges for services, or contingent income due for that year, if good and collectible." And in the next paragraph we read: "Debts which were contracted during the year for which return is made, but found in said year to be worthless, may be deducted from gross income for said year, but such debts can not be regarded as worthless *until after legal proceedings* to recover the same have proved fruitless, or it clearly appears that the debtor is insolvent." This is rather an awkward situation. We have been urging our members not to sue to collect accounts until more than a year has elapsed since the services were rendered for the reason that, at the end of a year, the period in which a counter claim for damages might be legally brought, has expired and a suit for damages would be thrown out without any danger of a trial of the case. There are two ways of meeting the difficulty. In the first place, at the end of the year, one might charge off his books such accounts as he considers hopeless, and then if, in the next year he collects them direct or by suit, he can include the money in that year's return. Secondly, he can include all such accounts in the current year's statement, and if in the course of the next year he sues and does not collect the bill, he can deduct the amount from his receipts as a loss during the year. Either plan would be perfectly satisfactory and would be honest to both the individual physician and to the government—and it would not cause a number of suits for alleged malpractice to be brought. When a physician sues a disgruntled patient for an overdue bill, that patient is very apt to file a cross complaint which is in the nature of a counter suit for damages, alleging that the phyiscian's treatment was negligent. We have had many suits of this character to defend and some of them have been very bitterly fought. (In passing, and parenthetically, let us urge you always and under all circumstances to have an X-ray plate made in every case of fracture—and keep the plate in safety.) One good may result from this requirement of the income tax; it may make many doctors more careful in their bookkeeping and it may tend to force them to follow up their accounts more carefully and make a greater effort to collect amounts due them. Certainly, if they put into the return of this year an account that they think is collectible they are going to make a pretty strong effort to collect that account next year. Opinions are at variance as to just what this "income" means; in the case of professional men, does it not rather mean the amount of actual money received during the year? Many lawyers think that it does and that the authorities are without satisfactory support in contending otherwise. Certainly it is a matter of mere common sense to consider one's "income" the amount of money he has received during the year and not to include in that the amount in addition which may be owed to him. Cash is cash but common sense is not always law.

"DISEASE AND ITS CAUSES"

is the title of a recent volume in the Home University Library of Modern Knowledge, Henry Holt & Co. Professor Councilman very modestly presents the subject of disease as "life under conditions which differ from the usual," and has succeeded in giving us a little book that should be read by every thinking layman; indeed, physicians themselves will find an immense amount of material for careful consideration in this present work. Were it possible to get two or three million people to read such a book as this and really understand what the nature of the make-up of the body is, and what disturbances it is subject to, we would hear very little about so-called Christian Science, "New Thought" and the rest of the awful twaddle that goes about; also, we should find fewer people censuring the doctor because every person is not cured of every ailment and so made to live forever. The book is delightfully written and we trust that it may have a large circulation among the lay public; help it along; help educate your patients so that they may come to know even a little something about the nature of "Disease and Its Causes."

NOTICE!

Forty-Fourth Annual Meeting.

SANTA BARBARA, HOTEL POTTER, APRIL 14, 15 AND 16, 1914.

RAILROAD RATES. The customary railroad rate of one and one-third fare, provided 50 or more are in attendance, will prevail. When you buy your ticket to go to Santa Barbara, pay the full fare and get a receipt-certificate. When you get to Santa Barbara, present this to the Secretary to be signed and then when you get your return ticket, hand this receipt to the agent and he will give you a return ticket for one-third the full fare. Do not fail to get the receipt-certificate or to have it signed by the Secretary, for if you do, you have no redress.

HOTEL RATES. The rates this year are on the European plan and do *not* include meals.

Room, without bath, one person,	$1.00
Room, without bath, two persons,	1.50
Room with bath, one person,	2.00
Room with bath, two persons,	3.00

Those who desire may be accommodated on the American plan, in which case add $2.50 per day per person to the above rates.

SOME REMARKS ON THE INDUSTRIAL INSURANCE ACT.*

By FRANK P. TOPPING, M. D., San Francisco.

The evolution of the Industrial Compensation Act is interesting—to say the least; quite interesting from many angles. Interesting to the members of the medical profession, to the casualty and liability companies, to the workmen as individuals, and should be interesting to the various labor unions whose members will constitute the vast majority of all who will (or are supposed to) benefit by the Boynton Act—a law.

I trust my remarks will not prove offensive to the Industrial Accident Commission, whose members I believe to be working for a just interpretation and enforcement of the law.

This humble article is respectfully dedicated to the medical profession, especially to the members of the State and various County Medical Societies; and to you, Mr. Insurance Man; and to you, Mr. Labor Union Man. Whether it is, or is not, a wise law, with far-reaching benefits to humanity, does not come within the scope of this paper. Suffice it to say that it *is* the law, and as the *law* it *must* be obeyed and enforced.

It has been often stated (by persons who do not know) that there is a "Doctor's Trust"—a "Doctor's Union." Would that it were so, for thereby many of the hardships and much of the injustice resulting from this law could then be easily controlled and rectified. As a matter of fact, in San Francisco County there are (according to the last published official list of the state directory) 1119 persons entitled to practice Medicine of whom 560 are members of the County Medical Society. With 50% of the profession joined in an association, it would appear that some concerted action to secure justice to the medical profession *could* be taken.

To ask a medical man who respects himself and the profession to which he belongs to accept the starvation fees which are submitted by the State Commission and cut still lower by the 14 or more liability companies is, to say the least, utterly foolish and humiliating. To offer $1.50 for hospital or home visit; $1.00 for an office visit with other compensation in proportion, is a cheerful picture to contemplate in these days of the high cost of living!

Is there any sense in the graduated scale of fees? For example: hospital or home visit $1.50 for fractured skull, $2.00 for amputation of the forearm. I maintain that a fractured skull is a very serious injury. The trephining of a skull requires the highest surgical judgment and skill (for which the surgeon is paid $50). Many patients suffering from a fractured skull die, with or without operation. Why then should a doctor be paid only $1.50 for visiting such a case, as against $2 for certain other cases? Distance, time, professional judgment are required as in other cases, to say nothing of an equal liability for malpractice.

Why should you, Mr. Medical Man, visit a patient, say in an outlying district, in the interest of a prosperous dividend-paying casualty company with a large capitalization and reserve fund; with some of the highest salaried men as managers, resident agents, etc., in their employ for the paltry sum of $1.50 to save a human life? A visit that may take you from your practice for two or three hours. A visit that may save the company hundreds of dollars.

And why should you, Mr. Working Man, expect a first-class service to possibly save your life for the sum of $1.50? Do you hold your life so cheap? Do you regard the use of your right arm (on which you may depend to earn your daily bread) as worth $10 or $12.50? Are you not entitled to the best service obtainable? Yes? Then make the company who insures your employer obtain the services of men capable of giving you the treatment to which you are entitled, instead of the cheap service, based on the cut-rate, non-living wage the company offers. Think this over, Mr. Working Man!

And you, Mr. Insurance Manager! Your position could be filled by a man earning one-third of your salary; but how filled? The salaries of your entire office and field staff could be cut one-half or one-third; but what service would you expect? What service would you secure? When a man applies to take charge of your office, what qualifications do you require? Should not the same relative requirements of your medical staff be looked into, instead of unloading your medical responsibilities on a 10, 12 or 15% premium basis; or proposing a scale of compensation, which, were it applied to insurance rates, would throw your company out of the board of underwriters? Think this over, Mr. Insurance Man!

Mr. Will J. French, Commissioner of the Industrial Accident Commission, in an address delivered before the San Francisco County Medical Society on January 6, 1914, stated: "As in Massachusetts, we propose to have the payments based on what would be charged the injured men and women should they have to pay the cost out of their own pockets. This is entirely a fair proposition. It is what you do right along."

Mr. Commissioner, the schedule contemplated by your board is far less than would be charged by any reasonable, capable medical man for the average working man. Your schedule and that of the liability companies may (we will admit for the sake of argument) be just for the man earning $3 per day—a man with a family; but how about the man earning $4, $5, $6, or $7, some without a family? Does the rate alter in proportion?

I think that the minimum fee is your idea, to govern all. It is not for you to revise our fee bill, nor to establish our fees. You have proposed the minimum (barring charity). Medical men as a class the world over do much work for nothing. No decent, self-respecting medical man ever refuses to treat the deserving poor without any thought of remuneration; nor refuses to administer to their ills; nor to answer calls at any reasonable hour of the day or night when occasion demands. To help them in many other little

* This article is not written in a spirit of vindictiveness or sarcasm, but to bring forth some points relating to Industrial Insurance for the consideration of the various Liability Companies and others who may be interested.

ways; to give but one class of service—the best in a man—is our privilege. But, Mr. Commissioner, there is a difference in *this* rate, and the rate that should be charged to a man earning at the minimum scale $3 per day, and ranging as high at $7 per day (and *getting* it). It is true that we treat some people for nothing. We are glad to do it and are proud of it. It is true that we reduce our fees in some cases, which we deem deserving, to an amount even less than the fee schedule proposed; but to expect us to enter into contracts with the large indemnity companies (who, by the way, are not in business for charity) or to treat cases for the State at these absurd rates is more than the average self-respecting practitioner should be asked to do. It is more than you have a right to ask, Mr. Commissioner! It is more than you have a right to demand, Mr. Insurance Man! It is not the service you are entitled to, Mr. Working-man!

Mr. French also states in his address to the County Medical Society above referred to: "We have consulted the best doctors in San Francisco, men whose names are known all over the land. They assure us that we are right in our position, and that the profession will endorse our stand."

Mr. Commissioner, I challenge that statement. It would be interesting to have you furnish us with a list of some of these "best doctors" "whose names are known all over the land"; men who endorse you in securing a cut-rate service of $30 for a capital operation; $1.50 for a hospital or home visit; $1 for an office visit; $1.50 for passing a catheter (note that, ye medical men), and $3 for a "complete physical examination with written report."

On receipt of this list of "best doctors"—if there are any among them belonging to the San Francisco County Medical Society—I think it would be in order to introduce a motion that their membership in the County, State and American Medical Association be cancelled, together with such others of our members who are accepting service under this starvation schedule.

In Conclusion: If the Commission honestly believes that under their adopted schedule, they can secure the "best care" obtainable for the injured working-man or woman, I think the commission is mistaken. Time will verify or disprove this.

If the casualty companies will look with as much care into the honesty, ability and other qualifications of their medical staff as they do in appointing their clerical staff, they will see without further argument, that they are securing cheap service commensurate with their own cheap schedule. If these companies are *really* honest (as I am assured they are), in desiring to give the injured wage-earner adequate care, I would urge that they look carefully to see that a medical gold-brick is not being handed them. The cheapest service in the beginning is sometimes the most expensive in the long run.

If the organized working-man is convinced that in order to economize, his employer, or the company insuring him, is furnishing inferior service, when he is entitled to that which is adequate, then this article will have, at least, accomplished something.

The medical profession is sick; far more indisposed than any individual or organization for which its services are required. It needs treatment; careful treatment. It needs organization; the same kind as 80% of the men have to whom doctors are called to administer. It needs a purgative; to be purged of the members who are accepting these cut rates, including "some of the best doctors in San Francisco. Men whose names are known all over the land."

While the society has fought against contract practice and hospital associations, and waged a bitter war to bring the insurance companies up to a $5 examination fee for life insurance, irrespective of the amount of the policy, and this JOURNAL,—*your* JOURNAL, Mr. Medical Man,—has given it backing and loyal support and publicity, it would seem that we could, at least, cast from our midst those men who are opposed to the best interests of the medical profession, and whom the society will have to defend in case damage suits are brought, *and there will be some.*

(Since this article was written there has come to our notice a statement from the medical director of the Industrial Accident Commission, in which some of the abuses above referred to have been recognized, indicating an earnest desire to improve the situation from a medical standpoint.—F. P. T.)

¶ FORTY-FOURTH ANNUAL MEETING OF THE MEDICAL SOCIETY, STATE OF CALIFORNIA, SANTA BARBARA, HOTEL POTTER, APRIL 14, 15, 16, 1914.

PROVISIONAL PROGRAM.

FIRST DAY.

Tuesday, April 14, 1914.

9:30 A. M.

Addresses and Reports of Committees.

1:30 P. M.

Symposium on the Relation of Joint and Endocardial Affections to Local Infections (3 papers).

1. The Relation of Local Infections to Joint Affections (15 minutes).
   Leonard W. Ely, San Francisco.
2. (Title to be announced) (15 minutes).
   C. C. Crane, San Francisco.

Discussion opened by John Carling (Los Angeles).

3. Early Symptomatology of Bacterial Endocarditis (15 minutes).
   E. C. Dickson and R. L. Wilbur, S. F.
4. Botulism (15 minutes).
   Thomas Williams, Palo Alto.
5. Diagnosis, Significance and Treatment of Bronchial Glands in Infancy and Childhood (15 minutes).
   William Palmer Lucas, San Francisco.
6. Leukocytic Extract and the Treatment of Pneumonia (15 minutes).
   Hary B. Reynolds, Palo Alto.

Discussion opened by W. H. Manwaring (Palo Alto).

8 P. M. **Business Meeting.**

SECOND DAY.

Wednesday, April 15, 1914.

9:30 A. M.

1. The Use of the X-Ray and Mesothorium in Gynecological Practice (10 minutes).
   Henry Kreutzmann, San Francisco.
2. Management of Three Cases with Relaxed Pelvic Outlet (10 minutes).
   Rexwald Brown, Santa Barbara.
3. A Rare Cause of Dystocia (15 minutes).
   J. M. Slemons, San Francisco.
4. Uterine Replacement; with particular attention to the Buteau Operation. (Illustrated with Lantern Slides (15 minutes).
   C. A. Dukes, Oakland.
5. The Dangers of Vaginal Examinations During Labor (10 minutes).
   Austin Miller, Porterville.
6. Two Unusual Cases of Hernia (10 minutes).
   J. J. A. Van Kaathoven, Los Angeles.
7. Shockless Surgery (10 minutes).
   A. B. Cooke, Los Angeles.

1:30 P. M.

1. Paroxysmal Hemoglobinuria Treated by Salvarsan with Disappearance of the Characteristic Blood Reaction (15 minutes).
   Walter Brem, Los Angeles.
2. Report of a Case of Blasto-Mycosis (10 minutes).
   W. W. Roblee, Riverside.
3. The Function of the General Practitioner in Relation to the Study and Prevention of Nervous and Mental Diseases (15 minutes).
   Harold Wright, Santa Barbara.
4. Report of a Case of a Child Dying from an Ant Bite (10 minutes).
   T. C. Edwards, Salinas.
5. (Title to be announced) (15 minutes).
   William E. Tebbe, Weed.
6. Photography in Relation to the Medical Sciences (10 minutes).
   H. D'Arcy Power, San Francisco.

8 P. M. **Business Meeting.**

THIRD DAY.

Thursday, April 16, 1914.

9:30 A. M.

California Association for the Study and Prevention of Tuberculosis (all day).

1. Induced Pneumothorax.
   Edward von Adelung, Oakland.
2. The Earliest Manifestations of Tuberculosis and Treatment.
   G. E. Ebright, San Francisco.
3. Social Insurance as Applied to Tuberculosis.
   John N. Force, Berkeley.
4. Tuberculosis in Relation to the Eye and Ear.
   George H. Kress, Los Angeles.
5. Why are Better Results Not Obtained in the Treatment of Tuberculosis?
   F. M. Pottenger, Monrovia.
6. Arequipa—An Economic and Sociological Experiment in the Care of Tuberculous Working Girls.
   P. K. Brown, San Francisco.
7. Surgical Stiffening of the Spine in Spinal Tuberculosis—Report of Cases.
   J. T. Watkins, San Francisco.
8. (Title to be announced).
   W. R. P. Clark, San Francisco.
9. (Title to be announced).
   George H. Evans, San Francisco.
10. Report of President.
11. Report of Secretary.
12. Report of State Bureau of Tuberculosis.
    B. F. Howard, Sacramento.

1:30 P. M.

Symposium on Gastroduodenal Ulcer.

1. Symptomatology and Diagnosis (15 minutes).
   Emil Schmoll, San Francisco.
2. Roentgen Ray Diagnosis (15 minutes).
   Walter Boardman, San Francisco.
3. Medical Treatment (15 minutes).
   L. G. Visscher, Los Angeles.
4. Surgical Aspects (15 minutes).
   R. C. Coffey, Portland, Ore. (by invitation).
5. Surgical Aspects (15 minutes).
   W. W. Richardson, Los Angeles.
6. Duodenal Feeding; Practical Demonstration (15 minutes).
   H. G. Watson, Los Angeles.

Following is the provisional program of the Ear, Nose and Throat Section of the State Society. Any additions may be sent to Dr. H. B. Graham, 209 Post St., San Francisco:

1. Luc-Caldwell Operation; Indications and Technic.
   Geo. W. Caldwell, Oakland, Cal.
2. Diagnosis and Treatment of Nasal Sinus Disease. Lantern Slide Demonstrations.
   John J. Kyle, Los Angeles, Cal.

3. The Surgical Approach in Cases of Nasopharyngeal Fibroma. Lantern Slide Illustrations.
Henry Horn, San Francisco.
4. Intranasal Operation for Dacryostenosis with Case Histories.
L. D. Green, San Francisco.
5. The Influence of the Resection of the Septum on General Diseases.
H. Y. McNaught, San Francisco.
6. Report of Two Cases of Thrombosis of the Lateral Sinus.
Cullen F. Welty, San Francisco.
7. Report of an Unusual Case of Labyrinthine Deafness.
Geo. P. Wintermute, San Francisco.
8. Further Observations on Laryngeal Tuberculosis.
H. Staats Moore, San Francisco.
9. A Case of Necrosis of the Hyoid Bone.
Adolph B. Baer, San Francisco.
10. Asthma in Its Relation to the Specialist.
H. B. Graham, San Francisco.
11. The Consideration of Nasal Conditions Causing Asthma.
W. H. Dudley, Los Angeles.
12. Meningitis in Its Relation to Otology and Ophthalmology.
W. P. Lucas, University of Calif.
13. Status Lymphaticus.
John Mackenzie Brown, Los Angeles.

Eye Papers.

Additional contributions may be sent to Dr. W. F. Blake, 240 Stockton St., San Francisco.

1. Cataract Complications.
Vard H. Hulen.
2. Some Problems in Refraction.
Percival Dolman.
3. Title to be Submitted.
H. Barkan.
4. Operations on Eye Muscles in Heterophorias.
E. W. Alexander.

Urological Section: Advance Program.

(Wednesday Afternoon.)

Early Hydronephrosis (illustrated with lantern slides).
Dr. G. T. Courtenay.

Results of Super-Pubic Prostatectomy for Hypertrophy of the Prostate.
Dr. M. Molony.

The Seminal Vesicles.
Dr. A. R. Rogers.

Other papers to be read at this session will be announced later.

Thursday Morning.

Functional Kidney Tests, their Diagnostic and Prognostic Value. Dr. W. B. Dakin. Discussion opened by Dr. W. B. Stevens.

Report of Supravesical Abscess with Cystoscopic Findings. Dr. Ralph Williams.

Hematogenous Kidney Infections and their Treatments. Dr. Granville MacGowan. Discussion opened by Dr. H. Moffitt, Dr. H. Ryfkogel, Dr. J. A. Lartigau, Dr. L. Porter.

Modern treatment of Gonorrhea and Its Complications. Dr. R. L. Rigdon. Discussion opened by Dr. V. G. Vecki, Dr. E. McConnell, Dr. G. G. Reinle.

Hematuria. Dr. Martin Krotoszyner. Discussion opened by Dr. H. Meyer, Dr. G. Evans, Dr. Dudley Fulton, Dr. A. Lobingier, Dr. T. C. McCleave.

Diagnosis and Treatment of Diseases of the Accessory Glands of the Urethra. Dr. A. B. Cecil. Discussion by Dr. J. C. Spencer, Dr. M. Silverberg.

REMARKS ON STONE IN THE BLADDER.*

By HENRY MEYER, M. D., San Francisco.

Although the complete removal of stone from the bladder at one sitting by crushing, followed by the immediate evacuation of the fragments, requires much greater skill than the removal of the same by opening the bladder, it is unquestionably the operation of choice. The only exceptions to this statement are the following: 1st, in cases where the calculus is lodged in a diverticulum; 2nd, in cases where the calculus is extremely large, although I have not yet seen a case where the calculus was so large that I could not remove every fragment at one sitting, and 3rd, in cases where the existence of the calculus is accompanied by retention of urine from a hypertrophied prostate or other obstruction, when the calculus should be removed with the prostate or such obstruction as exists in a given case. Cases of calculi attached to the wall of the bladder are quite common and are just as readily removed by litholapaxy as are those lying loose in the bladder.

It is very easy to detach a calculus from the wall of the bladder by striking it with the cystoscope or by grasping it with the cystoscopic lithotrite or ordinary lithotrite, and I wish to say that calculi may be found attached to almost any part of the bladder mucosa. I have seen several cases where they were attached to the anterior wall close to the neck, and others attached to the lateral walls and again others attached to the base. With the cystoscopic lithotrite small stones can easily be completely crushed under the guidance of the eye without the use of any form of anesthesia or with a local anesthetic in the posterior urethra.

To crush large bladder stones, the cystoscopic lithotrite is not a practical instrument, since fragments must be grasped and crushed and soon the field becomes cloudy, and while one can wash the bladder through the shaft of the instrument, it would be necessary to do this entirely too often to be practical; again when large calculi are crushed in the bladder, it is impossible to avoid the presence of some blood, yet the smallest amount of blood is sufficient to interfere with the cystoscopic feature of the operation; I am convinced from my experience that the cystoscopic lithotrite is only valuable for crushing small or medium sized stones unless the operation is to be done at several or many sittings.

I always give my patients urotropin in 7½-grain doses several days before the operation and continue its use for a week after.

The bladder should be thoroughly washed and distended with 150 to 200 cc. of clear sterile water or 4% boric acid solution, although I have often been compelled to crush calculi with very much less fluid in the bladder in cases where the bladder had become contracted and irritable, and in these cases even under profound narcosis the fluid would run out along the side of the instrument leaving very little in the bladder. In such

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cases one must work with great caution to avoid grasping the bladder walls; but even in these cases I have always managed to complete the operation without any bad results. If the calculus to be removed is large I prefer to give a spinal or general anesthetic, if small or medium sized I only use a 3% solution of alypin in the posterior urethra. If the patient is not very sensitive small calculi and occasionally large ones, particularly in the female, can be removed without any anesthetic whatever.

I hope it is unnecessary for me to say that all instruments should be sterilized. Every urologist has had patients who have been informed that they had stone in the bladder when none existed; the diagnosis having been made from the patients' symptoms; but every symptom that a patient can have with stone in the bladder could also exist from the presence of many forms of cystitis, some diseases of the kidney and some of the tumors in the bladder.

Again, occasionally stone in the bladder is not diagnosed by some who use the cystoscope, but more frequently stone in the bladder is diagnosed by some who use the cystoscope, when no stone is present. I do not believe there is any excuse for anybody to positively diagnose stone in the bladder when none exists. There are some rare instances where the X-ray will assist in the diagnosis when a calculus lies deep in a diverticulum and can not be seen or felt.

While most patients with stone in the bladder suffer from frequent urination and tenesmus there are certainly some whose symptoms are so slight that the presence of stone in the bladder would hardly be suspected, although the calculus may be large; this was the case in three of my patients, one of whom has a calculus one inch in diameter lying loose in the bladder, who has never had any pain or tenesmus although he urinates every two hours and has urinated about every two hours night and day for a period of twenty years and that is what brought him to me. On account of the fact that he does not suffer he refuses to have the calculus removed. I do not believe the calculus has produced the frequent urination because I doubt if it has been in his bladder twenty years. In my earlier experience I often failed to make a cystoscopic examination unless the symptoms seemed to be sufficient to warrant it, according to my own way of thinking, and I believe I must have overlooked the presence of stone in some cases as well as other pathological conditions.

Cystoscopy is the surest method by which one can make a correct diagnosis, but the stone searcher is a valuable adjunct.

Strange to say the nuclei of vesical calculi may consist of almost anything. In one of my cases, a woman, the nucleus of a large stone was some kind of wood, I believe an elmwood tent; in another, a male patient, the nucleus was chewing gum; both of these were removed with the Nitze cystoscopic lithotrite. It is immaterial what kind of lithotrite is used to crush bladder stones, but I would advise that the fenestra in the female blade be wide open, particularly when crushing large stones. The Chismore evacuator is the simplest and best I have used.

As to recurrences, I will say that since it is a settled fact that a good technician can remove every fragment by litholapaxy, recurrences are no more common when done by a good technician than after cystotomy. Every urologist knows of cases of recurrences of stone after cystotomy as well as after litholapaxy due to faulty metabolism. I believe that the complete removal of stone from the bladder by litholapaxy at one sitting is the ideal operation, and patients are rarely incapacitated for more than 48 hours and often not incapacitated at all.

Discussion.

Dr. Martin Krotoszyner: I was surprised to hear that Dr. Meyer laid so much stress upon the value of the stone-searcher which since the advent of the cystoscope has been almost entirely discarded, and I would like to know in what instances of bladder-stone Dr. Meyer considers the searcher useful from a diagnostic or any other standpoint. Obviously, a man who is possessed of the natural mechanical ability like Dr. Meyer's will regard almost every case of bladder-stone curable by the cystoscopic or non-cystoscopic crushing method, while those of us, less skilful in that work, or the average surgeon, will find more cases suitable to the cutting operation. I myself possess at least one specimen of bladder-stone, which I showed in one of our previous section meetings, and which is of such huge dimensions that it could not have been removed by i travesical crushing even at Dr. Meyer's skilful hands.

Dr. W. P. Willard: I think there is one type of vesical calculus that should be eliminated from the crushing operations, and that is the case where you have a sacculated bladder which has become infected and irritable. I saw one of the most skilful operators in the country catch up a fold of the bladder in such a case, and in order to release his instrument it was necessary to do a suprapubic cystotomy.

I have seen two cases in the last month—one a man with intense cystitis and very irritable bladder. The cystoscopy was extremely difficult—the stone was larger than the largest of these shown by Dr. Meyer, and it would have been a very difficult procedure to crush this. We did a suprapubic cystotomy and the man was out in 10 days. We drained 3 days.

The other case was one of tabes, in which we did not operate. The man received an injection of cerebrospinal fluid after an injection of salvarsan, and was shortly afterward relieved of over-distension amounting to 30 oz, afterwards developing a pronounced cystitis. We cystoscopized him and saw a stone quite as large as the one demonstrated here. The bladder, from its over-distension, folded over the stone so that I think it would have been impossible to dig it out without grasping one of the folds of the bladder. The bladder could have been opened and immediately closed, and I think the man would have been up in five or six days. I think in these cases we should use some judgment in regard to crushing.

Dr. Meyer, closing discussion: Regarding Dr. Krotoszyner's remarks, I want to say that the doctor has deliberately distorted my statements and proceeded to discuss the same along the line of his own distortion. Dr. Krotoszyner stated that he could not understand why I said the stone-searcher was equal in value to the cystoscope in diagnosing stone in the bladder, when in reality no such statement was made by me, or would be made by anybody; in fact no statement was made

by me which could possibly have been construed to have such a meaning. Dr. Krotoszyner wishes to know in which cases the stone-searcher is useful. In reply I will tell the gentleman that it is useful in some cases where a stone lies in a diverticulum, and also in some cases where mucus or pus has accumulated into masses lightly covered with urinary salts, resembling a calculus. The stone-searcher readily disintegrates such accumulations and produces no sounds such as are obtained in cases of real calculus. Dr. Krotoszyner also stated that he did not believe that any patients could be well in forty-eight hours after litholapaxy. In reply I wish to say that if Dr. Krotoszyner did the operation of litholapaxy skilfully, he would not have made such a statement, as patients often walk away from the office after litholapaxy and remain well, when the work is done by a good technician. When I read my paper, I distinctly stated that in cases of very large calculus, supra-pubic cystotomy was indicated; but I had not met with a case as yet, where I did not remove every fragment at one sitting. In spite of this statement, Dr. Krotoszyner said he once showed a stone which he did not believe I could have crushed. Since I did not claim to be able to crush every calculus, regardless of its size, I believe Dr. Krotoszyner's statement was unnecessary and ridiculous.

SYSTOLIC APICAL MURMURS.*

By A. HENRY DUNN, M. D., San Diego.

I like to think of the heart as a central hollow muscular organ directly concerned with everything that reaches the circulation, and with the central nervous system. The fact that the heart is thus concerned with circulatory contents and the nervous system, and that the heart is an organ in which temporary changes soon result in permanent changes, makes the discussion of murmurs a complicated one.

MURMURS MAY BE

A. Relative or Mural.
B. Endocarditic.
C. Chronic Sclerotic.
D. Reflex.
E. Murmur from rupture of valve segments. (Very rare.)

The neurotic probably belong to the mural variety.

We can not discuss murmurs without remembering dilatation and hypertrophy. Nor should we think of dilatation and hypertrophy without remembering that dilatation will bring out the murmur while hypertrophy will obliterate it. It is also important to recall that dilatation in a heart with normal muscular fibers is a different consideration from dilatation in a heart with diseased muscle fiber, as in fatty degeneration, etc. One is functional and the other is pathological.

By far the most frequent murmur that we meet in practice is a mural or muscular murmur, or what is most often called "a functional murmur." It is the murmur due to dilatation of the mitral ring to which the mitral valves are attached. The opinion that functional systolic murmurs, as well as any other murmur both endocardial and frictional, might be produced as a neurosis in a neurotic individual, is held by the best authorities. A murmur that was not preceded by overaction is the only murmur that I would call reflex.

That not only a systolic apical murmur, but all signs of failure of compensation may be a primary affection, is asserted by Hoover. Hoover states that from prolonged overaction for several days you might have increase in size, cyanosis, dyspnea, pulmonary edema, hepatic stasis, albuminurea and lung edema, all of which might suddenly disappear, showing that it is a primary affection and a muscular functional imposition.

Though not all tachycardia is followed by a murmur, all apical murmurs except reflex, and possibly some of those of fatty degeneration, are preceded by tachycardia. Therefore I can't help associating tachycardia and functional murmurs. I consider tachycardia as the first stage of most functional murmurs. Hence I always like to look for the cause of tachycardia. I never consider a disease which causes tachycardia cured until the pulse returns to the normal number of beats. Hence Graves disease should be treated as long as the pulse is faster than normal. In women Graves disease and floating kidney are very common causes of tachycardia. In men overexertion, constant muscular strain, excesses of stimulants and passions are frequent causes. The term "nervous individual" is often vaguely used when treatment of Graves disease, floating kidney, flat foot, athletic stunts or sexual and other excesses would soon remedy the tachycardia, and hence prevent the development of a functional murmur in some cases.

The high tension of civilization with lack of comparative shaping of our habits to fit same is responsible for many functional murmurs. I have been astonished at the great number of murmurs met with in the last few years since I examine patients' hearts after exerting them. (Making them hop, etc.).

As to so-called hemic murmurs being due to fluid veins: To my mind the term hemic murmur is often illogical. First, because I have examined the hearts of one thousand Indians over fifteen hundred times, made many Zohli hemoglobin tests and found no murmurs, though many cases of oligochronemia due to poor hygienic conditions. If these murmurs were due to fluid vein they would be more frequent and more constant in anemia; they are therefore, if found in anemia, due to myocardial and nervous elements. The Indians not being nervous, nor prone to overaction, rarely if ever have a murmur due to anemia. This supports the view that overcivilization associated with high tension is a better explanation than anemia in the greatest majority of cases. As a nation we suffer from chronic lack of inhibition, and eventually our cardiac nerves show it by overaction, and the myocardium by insufficiency.

We have all examined pernicious anemias a few days before death and they had no murmur. Even if patients who have murmurs have also oligochronemia, it is just as true that the latter might be due to the same cause as the murmur, as when occurring in overworked, poorly nourished individuals whose myocardium partakes of the general condition and becomes insufficient. My experience leads to the conclusion that very few murmurs are associated with anemia if rigid standard test be used.

* Read before the San Diego County Medical Society, September, 1913.

Like the Zahli test. In his postmortem findings, Cabot states that very few antemortem murmurs in markedly enlarged hearts prove to have been due to any anatomic changes in the valves.

It should be remembered that the old term "broken heart" does occur from disappointments as cited by Hoover; as the heart will have to pass through many stages before failure of compensation in what is called a broken heart, mental strain and worry should be sought for in tachycardia and functional murmurs. While hysteria and especially neurasthenia are less and less often blamed for many functional disturbances as our technic of examinations and laboratory methods become more developed, it should not be forgotten that it is important to recognize cardiac overaction from such causes dating back to youth, and elicit the history of the same in patients advanced in age. Those who early in life impose on their neurovascular system pay by disease of the myocardium and hypertension, probably due to hystologic changes incurred in youth.

Careful research for a cause of cardiac overaction and murmurs will eliminate many mysterious murmurs and place them in among symptoms of Graves disease, floating kidney and other correctable causes. The physician who can not make such a search is not giving himself a square deal.

It is well to remember reflex murmurs. I found a murmur in a patient of acute parenchymatous nephritis whom I have examined many times in the last six months. The murmur was loud and transmitted to the axilla. It disappeared directly after vomiting. It was due to overeating after a period of food restriction; what I consider as important to distinguish this murmur from a purely mural murmur, is that it was not preceded by overaction or tachycardia.

The next frequent murmur is due to endocarditic degeneration. Chronic valvulitis is usually due to fiberosis of valves 50 per cent. of which is a sequence of acute rheumatism.

Robt. M. Wilson [1] proved with autopsies at the Philadelphia Hospital that many so-called tonsillar endocarditis were due to latent inherited syphilis and some occurred in families of tubercular history. It is a sclerotic murmur and Wilson rightly points out the hope of a more frequent diagnosis by the use of the Wassermann test. We have a similar case of a young girl at the San Diego County Hospital. Wilson found this condition of fiberscleroses associated with pipe-stem arteries in a child who had latent hereditary syphilis. Wilson I think rightly doubts the explaining away of regurgitation on the ground of endocarditis being a result of tonsillitis. This doubt was confirmed on repeated necropsy discerning fiberscleroses of the mitral valve. I feel as certain as Wilson that we are only too apt to accept the tonsillitis as explaining an endocardial murmur, especially since no definite history of endocarditis can be ascertained.

Let me cite a case of Wilson's description: M. S., age 10. Father died of pulmonary tuberculosis. Mother has chronic nephritis.

Personal history: Was born abnormal, was hard to induce breathing at birth. Cried the first three months of life, but mother does not recall if patient was blue. Very seldom had a sore throat and never known to have had tonsillitis. Heart was always fast and forcible. Never noticed edema or ascites. Present attack for four months, dyspnea, cyanosis, arythmia and palpitation, slight edema of ankles and lids. Systolic murmur at apex, transmitted to axilla. Apex beat sixth interspace one-half inch to left of nipple line. Radial arteries easily palpable. Pulse 125.

Diagnosis: Mitral incompetency, probably from sclerosed mitral valves.

Patient died from an intercurrent disease after compensation was established. No Wassermann was taken. No necropsy.

Wilson also cites two cases of mitral involvement in sisters members of a family in which a large number of the recent ancestry had been tubercular. As the White Plague is so common, I should not wonder if many cases of mitral regurgitation might thus be satisfactorily explained by an inherited weakness in the valves which result in a sclerosis. Careful observation in this direction will prove of benefit. The latent syphilitic mitral valvulitis Wilson found in children associated with sclerosed vessels and accentuated second aortic sounds.

The rest of the chronic sclerotic valvular fibroses are due to the same causes as arteriosclerosis: chronic rheumatism, alcoholism, syphilis and old age. Some fibroses might have begun after an acute or chronic infectious disease circulating toxins in the blood.

It is asserted by good authority that men at sixty can have a systolic murmur as they can ordinarily arterial scleroses, and that most of them have systolic murmurs. My experience does not coincide with this authority.

DIFFERENTIATION OF MURMURS.

The most important means of diagnosing a cause of a murmur is repeated examinations in various postures at rest and on exertion. The next important point is a careful history.

One point to remember is that the pulse in the endocarditic group is sometimes irregular, as a rule, while in insufficiency it is regular. The curve will often have to be taken for this with a Mackenzie or other polygraph. The frequency is greater in functional murmurs than in organic. Where there is forcible displaced apex beat and increased area of dullness, greatly accentuated second pulmonic and rough systolic murmur, the diagnosis of valvulitis is not so difficult in children with thin walls. But in hypertrophied heart and myocarditis from any other cause, it is very difficult. To determine whether there is a lesion of the valve, repeated examinations and a careful history will often be the only means of diagnosis. In these conditions on repeated examinations it will be found frequently that the murmur is present on recumbency and absent on standing. Also in insufficiency on rest the murmur disappears entirely.

Digitalis accentuates a valvular murmur, while in insufficiency the murmur disappears under digitalis. But digitalis like any other drug should not be used except in extreme necessity, as will be discussed in treatment in another paper.

PROGNOSIS OF MURMURS.

This will depend upon the etiology. Many young men who were rejected many years ago by

insurance physicians are well and passed insurance physicians since.

On the other hand, a slow mitral incompetency combined with a moderate degree of narrowing may become progressive. Progressing to calcification and failure of compensation. Others with the same narrowing may live a long time.

Valvulitis in children under twelve is not for a bright outlook, especially if liable to rheumatism. As a rule the older the patient when endocarditis occurs the better the prognosis. In cases overstimulated by drugs and habituated to drug use, as a cripple to crutches, I have observed that the hope for benefit will depend upon the weaning and future abstinence from drugs.

I would consider every murmur as one not to be treated by drugs, until we ascertain its etiology. Most murmurs require no drugs; what is more, the patient can be greatly harmed by the injudicious use of drugs. The physician who plunges into his materia medica without carefully ascertaining the cause should quickly make room for a Christian Scientist, as such physician might be even vastly more injurious.

I confess having stopped digitalis in hearts that were made absolutely arythmic by its injudicious administration. Also strychnine, where the patient became almost distracted from palpitation. I am afraid digitalis is too often linked with heart disease and that stimulants are too often thought of when sedatives are indicated.

Happily for most of us, such remarks are not often indicated in our profession, and I accordingly offer my apologies to the great majority for even mentioning this irrationality.

1. In the Am. Journal of the Med. Sciences, July, 1913.

SOME SOURCES OF ERROR IN BLOOD PRESSURE MEASUREMENTS.*

By EUGENE S. KILGORE, M. D., San Francisco.
With the collaboration of W. H. STABLER.

Two years ago you appointed Dr. F. M. Pottenger, Dr. R. L. Wilbur, Dr. H. D. Power and Dr. G. F. Reinhardt a committee to investigate the effect of athletics on the health of the participants. This paper contains a partial report of some work which was undertaken as an introduction to this problem at the Students' Infirmary in Berkeley under the influence of Dr. Reinhardt, the member of your committee at the University of California. Since blood pressure measurements occupy a prominent place in such investigations, it seemed primarily desirable to know how much they can be depended upon; particularly in comparative studies, how closely the observations of one person will parallel those of another. For the present, attention is limited to some of the ordinary types of instrument in use among practitioners.

These employ a hollow rubber cuff supported outside by cloth or leather, which is fitted about the arm and inflated with air, the pressure being indicated by a gage or manometer. The supposition is that the air pressure is transmitted through the soft parts to the walls of the brachial artery, and that when this pressure is raised above maximum or systolic arterial pressure the artery is completely collapsed; and that then, with slow escape of air and fall of cuff pressure to an amount just less than systolic pressure, the artery is forced open momentarily for the passage of the crest of the pulse wave. At that instant systolic pressure is to be read on the manometer. With further decrease in cuff pressure the portions of the pulse waves which force their way past the obstruction become larger; and, so long as the cuff is able to close the artery between beats, the up-fling and downfall of pulse waves under and below the cuff are quick and wide, usually increasingly so. But just when the cuff fails to do this, the flow becomes continuous, the artery is always filled, and consequently the fling of the beats is limited by the elasticity of the artery wall. The effort is made to read diastolic pressure when this change occurs from maximal to smaller pulsations.

For sources of error, therefore, the following points need to be considered: (1) Is the cuff pressure transmitted undiminished through the tissues of the arm? (2) How much resistance does the artery wall itself offer to compression? (3) The reliability of the various criteria used to determine when the first waves pass under the cuff. (4) The same for diastolic pressure. (5) The reliability of the manometers and pressure gages used.

(1) THE EFFECT OF THE TISSUES OF THE ARM.

That non-relaxation of the arm makes the readings too high has been shown by Hensen,[8] who found differences in systolic pressure all the way from 5 to 80 mm. Hg in simultaneous readings from the two arms when the subject held a weight in one hand. The same writer observed a positive error also in the case of edema of the arm. In a patient with one arm normal and the other markedly edematous there was a difference in the pressure readings of 20 mm. Hg, whereas the two arms registered equally before and after the period of edema. Hensen used palpation to determine when the pulse waves returned, so that the errors associated with muscular rigidity and edema may have been due either to imperfect transmission of the cuff pressure to the artery or to increased difficulty in palpating the artery, or to both.

Hill and Flack[9] have compared the pressure readings in arm and leg, putting one cuff around the arm and the other just below the knee and palpating at the wrist and foot. In healthy young individuals lying horizontally they find systolic pressure the same in arm and leg; and, when there is a difference of level between the two cuffs, i. e., when either the head-up or head-down position is assumed, the pressures differ by an amount substantially equivalent to that of a column of blood of the same height. This relation between limbs of different size they believe would not exist if the soft parts or the artery walls absorbed any appreciable amount of the pressure exerted by the cuff. Williamson[22] in 35 cases rarely found this close correspondence between arm and leg pres-

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sure readings, but Hill points out that he did not take the readings simultaneously, which is essential in a comparison of this kind, on account of the frequent changes in pressure from moment to moment.

Hill and Flack[9] devised another ingenious experiment in support of the accuracy of blood pressure measurements by circular compression. After determining by the ordinary palpation method that the systolic pressure in a subject is, for example, 150 mm. Hg, they maintain this pressure in the cuff for a time and find that the arm does not swell, showing that the lumen of the artery is really obliterated. Then they drop the cuff pressure to 145 mm. and hold it there. The arm becomes very much congested, and they find that the pressure in its veins rises to exactly 145 mm.

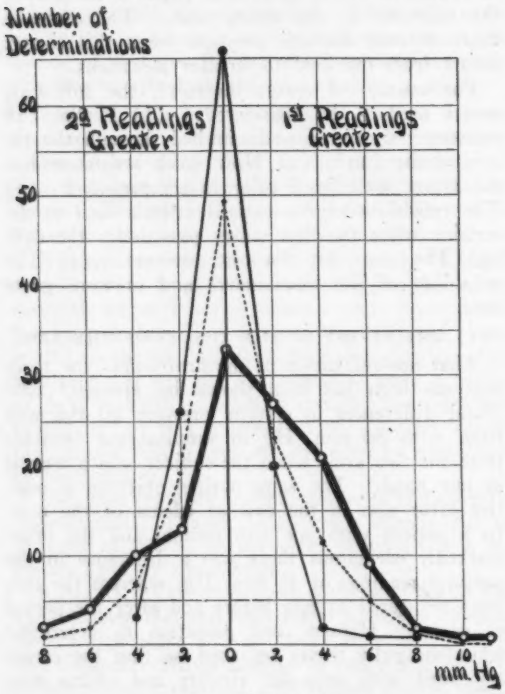

Figure 1.

Since this pressure is derived from the artery, arterial pressure must be at least 145 and not over 150. The point of possible weakness in this experiment would seem to be the measurement of the venous pressure. This was done by placing a second cuff a little below the first and raising the pressure in it to well above arterial pressure. One of the veins between the two cuffs being milked empty, the pressure in the lower cuff is gradually lowered. At the moment when the vein refills, venous pressure is read on the manometer attached to the lower cuff. This has to be done quickly, however, as the vein soon refills from its anastomotic connections.

Both of these experiments of Hill and Flack need further trial. In the few instances (14, 20) in which it has been possible to compare the circular compression and palpation method with direct manometric observations in human beings, the former has appeared to give readings from 7 to 20 mm. Hg too high.

Stewart,[18] using his calorimetric method, also shows that the cuff pressure which will just prevent pulse waves from passing is the same as the pressure necessary to stop the blood flow in the arm.

It has been repeatedly shown that if a narrow cuff is used, considerable pressure may be taken up in deforming the soft tissues or the artery wall. For example, Erlanger,[4] in a series of comparative determinations with cuffs varying from 5 to 17 cm. in width, obtained readings 30 to 40 mm. higher with the narrowest than with the widest. The errors became progressively less the wider the cuff, but did not seem to be entirely eliminated even

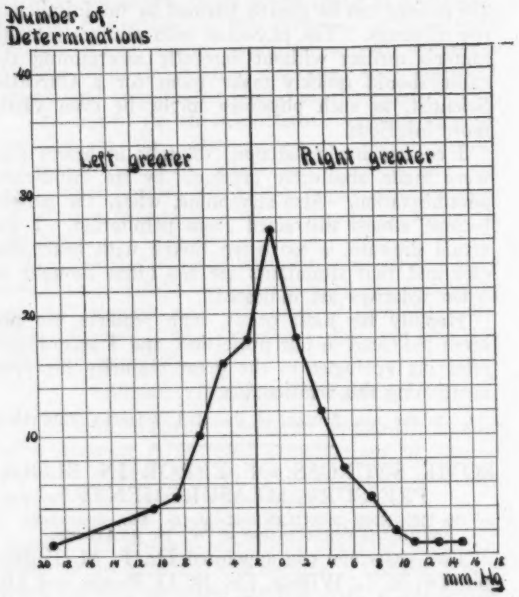

Figure 2.

with the 17-cm. cuff. The error from a 12-cm. cuff is probably small compared with other sources of error, and this width is generally accepted as standard. For the smaller arms of children a narrower cuff will give the same degree of accuracy [7, 8, 15]. Failure to fit the cuff accurately will give rise to errors in a manner similar to that of a narrow cuff. Before inflation it should be snug and smooth but not tight.

The prevailing view is that in the absence of edema and muscular contraction, and with a sufficiently wide cuff, the size of the arm makes little or no difference in the reading; and this view is supported by the experiments of Hensen[8] and Janeway,[11] who have each reported a case in which one arm was paralyzed and somewhat smaller than the other, and in which the blood pressure was read the same for the two arms. Low readings may be obtained in very stout subjects (Janeway). A little clothing on the arm creates no more error than the arm tissues themselves, provided it is not thick and stiff; and measurements made without

rolling up the shirt sleeve may be more accurate than those secured with a cold rubber surface placed directly on the skin of a sensitive patient.

(2) RESISTANCE OF THE ARTERY WALL TO COMPRESSION

All present methods of bloodless blood pressure measurements depend upon the assumption that the artery wall yields readily to compression, that the resistance is due to the pressure of the blood within. As a matter of fact, the artery wall itself may offer considerable resistance to compression. A thin-walled rubber tube of the diameter of the radial artery requires a pressure of 150 mm. Hg to completely close it;[16] a boiled artery may resist a compressing force up to 164 mm. Hg; an ox carotid in rigor mortis 30 to 70 mm. Hg; and it is a common observation among surgeons that a little handling of arteries in the living causes them to stiffen remarkably.

Many clinicians think they can feel changes in the caliber of a patient's vessels from time to time;[1] and Hoover,[10] by immersing one arm of a healthy man in ice water, found that the pressure reading in that arm could be raised 22 mm. Hg while the pressure in the other arm was not affected.

Russell [16] insists that in disease, in response to toxins in the blood or other causes, arteries often assume a rigidity ("hypertonus") approaching post mortem rigor, and that the high pressures recorded are due to this more than to actual high blood pressure.

Careful experiments on the resistance of arterial walls to compression have been reported by Janeway and Park.[12] They found that the application of vaso-constrictor agents may so stiffen an ox mesenteric artery that it requires an external pressure up to 51 mm. Hg to obliterate it. They also showed that arteries with extensive atheroma may offer but little resistance to compression, because the plaques are not continuous, and even though some parts of an artery are actually calcareous, other parts will easily collapse—another reason why a wide cuff should be used.

Against any very large error from this source are the previously mentioned experiments of Hill and Flack and the comparison with direct manometric determinations of Müller and Blauel,[14] and of Volhard.[20]. These observations, however, have not been sufficiently confirmed, and it would seem that much more experimental work must be done before we shall know what are the limits of error from this source. Until then we shall have to bear in mind the possibility that when we find high pressure readings, we may in reality be measuring not mainly high blood pressure but increased arterial resistance.

(3) CRITERIA FOR SYSTOLIC PRESSURE.

For some reason, not yet satisfactorily explained, systolic readings taken while slowly inflating the cuff are usually a little higher than those obtained with falling pressure.[4] We shall consider only the reappearance of the pulse waves after obliteration, which is the common usage. Three criteria are in general use: the oscillatory, the auscultatory, and the method by palpation.

(a) Oscillatory method (von Recklinghausen). When the cuff pressure is above maximum arterial pressure the impact of the pulse waves at the top of the cuff produces small oscillations in its pressure. These may be observed as excursions of the mercury in a manometer or the pointer of a spring instrument, or special contrivances to show these oscillations, such as a writer on a smoked surface, a drop of liquid or a pith-ball in a glass tube, etc. When the cuff pressure falls just low enough to allow blood to pass under it, the impact of the pulse waves is felt not only at the upper margin of the cuff, but through its length, and the amplitude of its pressure oscillations is more or less suddenly increased. Systolic pressure is read at the instant when this sudden increase in amplitude occurs.

In Erlanger's [4] painstaking experiments with an artificial scheme and with dogs, this criterion gave results closely corresponding with direct manometric readings from the vessels. When there is a sudden and decisive change from small oscillations to large ones, this method is perhaps freest from subjective errors and the truest index we have of the time when pulse waves begin to pass under the cuff. But in many cases the transition is not sharply defined, even with instruments designed to minimize inertia errors (a mercury column is too heavy to be at all reliable for this purpose); or there may be more than one point where the oscillations abruptly widen. The designers of instruments intended to use this principle admit the presence of this difficulty in certain cases, and I have found a disappointingly large number of cases in this group.

With graphic instruments the doubt as to where the sudden increase in amplitude occurs may be removed by recording a series of oscillations with the air outlet closed after each decrement of 5 or 10 mm. Hg in cuff pressure.[4] This, however, is time consuming, and we are not yet sufficiently informed in regard to the effect of protracted cuff pressure on the blood pressure determinations.

Another indication of systolic pressure is the appearance of a little shoulder on the downstroke of the pointer or writing lever, which is due to the slight delay in emptying the portion of artery under the cuff when waves begin to go through it.[4] This observation may be useful in cases where there is no sudden increase in amplitude of oscillation, but, unfortunately curves are not infrequently encountered in which the point of abrupt widening of the oscillations and the appearance of the shoulder do not coincide.

(b) The ausculatory method, first described by Korotkow in 1905, depends upon the stethoscopic detection of sounds over the artery below the cuff when waves begin to pass through. If congestion of the arm is avoided and the stethoscope is placed lightly over the artery 4 or 5 cm. below the cuff, the readings obtained are definite and are said to agree well with those of the oscillatory method.

The technic does not require much practice nor any particular kind of stethoscope; a bell 2 or 3 cm. in diameter is convenient. And it would seem that in the case of a physician who already owns a stethoscope, the only result he could expect from the purchase of a special contrivance widely advertised for this purpose would be to add weight to his outfit and increase the revenues of the manufacturers.

(c) The palpation method. The most commonly used and the most convenient method for detecting the reappearance of the pulse waves is by palpation of the radial artery. The distance of the wrist from the cuff and the frequent presence of considerable tissue about the artery make it impossible as a rule to feel the first waves which pass the obstruction; consequently, readings by this method are usually somewhat lower than those obtained by the other two methods, often 5 to 15 mm. Hg.[22] Experiments by the writer and an assistant, which will be described presently, agree with these observations. But if, as now seems probable, some of the cuff pressure is taken up in compressing the artery wall, these lower

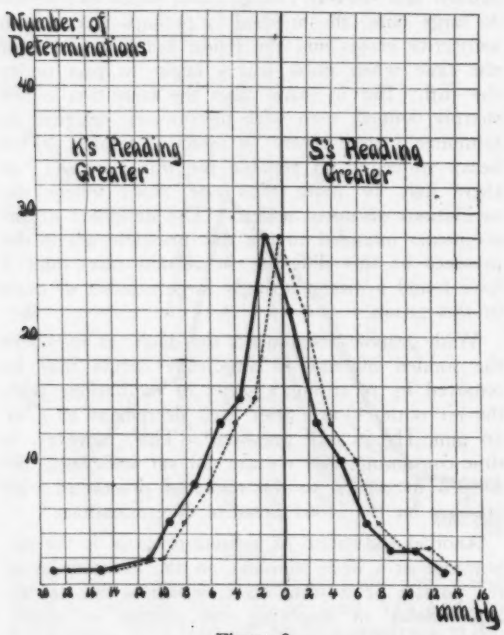

Figure 3.

figures are really more nearly true. And it should be remembered that in the few recorded cases which were controlled by direct manometric observations,[14, 20] palpation gave results several millimeters too high. Moreover, anything that stiffens the artery and increases its resistance to compression should also delay the detection of returning waves by the finger, and thus automatically tend to neutralize the error due to hypertonicity, though the amount of error and of the correction would be unknown. Another advantage which the palpation method enjoys in common with the auscultation method for systolic pressure is that there is no doubt about where to make the readings, as the very first wave felt may be accepted as the reading point.

The objection frequently brought against it is that the sense of touch is less accurate than hearing and sight, so that the results of this method contain more subjective error. Mr. W. H. Stabler and I have attempted to measure this error for ourselves. He is a student who has assisted in this work for a number of months, and we ventured to consider ourselves possessed of average tactile and visual acuity. Five hundred and sixteen determinations were made upon 46 subjects, all healthy young men who were being examined medically for entrance to college. We rejected any who seemed slightly chilly or excited or otherwise unsuitable. With the subject lying flat on his back on a narrow table and with arms relaxed at his sides, a 12 cm. cuff was carefully fitted to each arm and both attached to the *same* mercury U-tube manometer, which was overhung so as to be equally readable from both sides of the table. Both cuffs were inflated at once by turning on the compressed air which is available in the Infirmary and which proved a great saver of labor and time; then

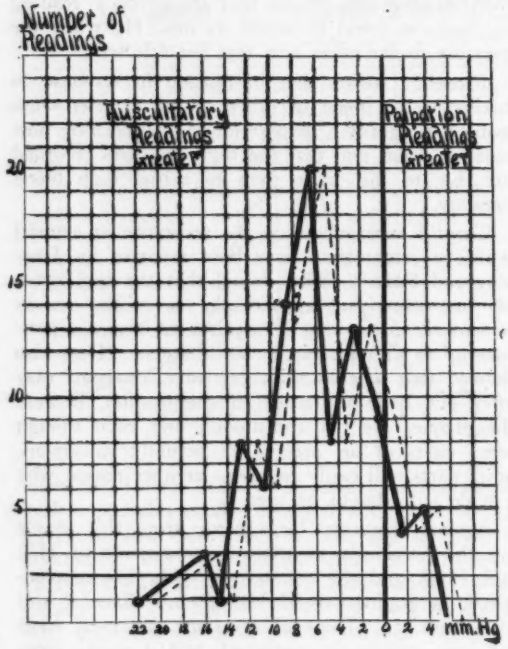

Figure 4.

slowly both arms were equally and simultaneously decompressed by escape of air through the Erlanger stop-cock, while one of us palpated the right radial and the other the left, each recording his readings independently. Comparative readings of this kind would be worthless unless these precautions were taken to eliminate the effect of respiratory or other variations of pressure. After two such readings we changed sides and repeated.

On bringing together the results it was found that the average of K's readings was 124.43 mm. Hg, of S's 123.15, a difference of 1.28.

In comparing the first and the second reading

(on the same side) we expected that the second readings would average higher, because after finding about the level of pressure in one trial one might concentrate his attention on this region of the manometer and detect a still smaller wave next time. But S's second readings averaged exactly the same as the first, and the average increase in K's second reading was only 0.065 mm. Hg. In individual instances, as might be expected from causes other than observation errors, there were considerable differences between first and second readings; and the amounts of these differences and their relative frequency of occurrence are shown in figure 1. The light line gives S's results, the heavy line K's, and the dotted line the average.

The average of all the left arm readings was 0.076 mm. Hg greater than for the right, a negligible figure. The even distribution of the higher readings for right and left sides is shown in figure 2.

For showing the discrepancies between the simultaneous readings we have compared the readings of S with those of K (using the average of two readings in each case), and the results are shown in the solid line of figure 3. The dotted line shows the results after correction for the average amount (1.28 mm. Hg) by which K's readings exceeded S's. With this correction, which, however, makes little difference in the results, the discrepancy was within 3 mm. in 55% of the determinations, within 5 mm. in 80%, and was more than 10 mm. in 1 2/3%.

In cases where there were wide differences we changed sides and made new observations repeatedly, also readjusted or exchanged the cuffs; and the later readings in these cases were usually closer together. (In summing up, we included all the results, good and bad). In no case, however, could we satisfy ourselves that the discrepancies were due to faulty fitting of the cuffs or that the higher readings were constantly to be found on one side.

These figures give no indication of our absolute errors, but only our disagreements. They are not even necessarily a measure of our inaccuracies in palpating the artery and reading the manometer; for it is possible that differences occur in the tonicity of the arteries in the two arms, perhaps as a result of the novel sensations connected with applying and inflating the cuffs. It has been shown that cold applied to one arm may have this effect.[10]

The results *do* indicate how much *variable* error is likely to occur in measurements of systolic blood pressure of healthy young subjects by one of us using the palpatory method. For example, if one of us made a series of such observations where comparative results were desired rather than absolute values, experimental error should be expected equal to that shown by figure 3. The variable error might be less if the observations were all on one individual or on subjects well accustomed to having the cuffs applied; and it might be greater if more observers contributed to the series.

The palpation method was compared with the auscultatory for systolic determinations 92 times, using 46 subjects, the same subjects being used and the same arrangement of cuffs and manometer for securing simultaneous readings as described above. One of us (K) placed a 4 cm. diaphragm stethoscope 2 to 5 cm. below the cuff on one arm and recorded his manometer reading when the first sound was heard with falling cuff pressure; while the other (S) palpated the opposite radial artery for the first perceptible pulse wave, and recorded his reading independently. We then changed sides and repeated.

The results are shown in figure 4. The dotted line was made by raising all of S's palpation readings 1.28 mm. Hg, this being the amount by which his palpation determinations had been found to average below K's. Without this slight change, which makes little difference in the results, the average of all the palpation readings is 120.25 mm. Hg, that of the auscultation readings 125.63, a difference of 5.38. In 4.3% of the derminations auscultation gave results higher by more than 15 mm. Hg; in 16.3% by 10 to 14 mm.; in 37% by 5 to 9 mm.; in 32.6% by 0 to 4 mm.; and in 9.8% of the instances the palpation reading was greater by 1 to 5 mm. Hg.

(4) CRITERIA FOR DIASTOLIC PRESSURE.

(a) Oscillatory method. The majority of investigators are agreed that with gradually falling cuff pressure the last of the maximal pressure oscillations in the cuff occur when diastolic or minimal pressure is reached.[4, 15]. A graphic apparatus such as Erlanger's is best for determining this point; but even among those curves there is not infrequently one where opinions may differ as to the reading point to accept. Instruments with a pointer and dial present still more difficulty, because one has only a mental record of the extent of the foregoing oscillations, while mercury instruments add to these difficulties the large errors due to inertia.

(b) The auscultatory method. In the region of diastolic pressure the sound accompanying each pulse wave in the artery just below the cuff usually becomes loud and sharp, then suddenly changes to a low dull tone, and with a little further reduction of pressure, disappears. Comparisons with the oscillatory method [3] and with direct manometric measurements [21] have favored the change in sound as the criterion for diastolic pressure, but opinion is not yet settled, some maintaining that the disappearance of all sounds is a better indication [2, 5, 6]. The change in sound is usually sharp-cut, and if foliowed, should give good comparative results, though cases are not infrequent in which the change is absolutely gradual.

(c) The palpatory method. Strasburger [19] and Ehret advocate determining diastolic pressure at the point where, with diminishing cuff pressure, the pulse below the cuff becomes largest and most collapsing. In this procedure there is the greatest opportunity for subjective error.

(5) MANOMETERS AND PRESSURE GAGES.

Mercury manometers are the most reliable. With glass tubing of at least 2 mm. inside diameter

and with reasonable care to have mercury clean the tube vertical, the zero of the scale properly placed, etc., one can be perfectly sure he is measuring the air pressure in the cuff correctly. With a U-tube the scale is half as long as with a reservoir and single straight tube, but the extra error in reading on the short divisions is slight in comparison with others. Mercury has far too much inertia to respond quickly to changes in amplitude of pressure oscillations, and should never be relied upon for showing oscillatory criteria.

The other common type on the market consists of a pointer which is moved by the expansion of a hollow spring or aneroid chamber. Some of these instruments are extremely light and portable, and they always enable the user to observe the oscillatory phenomena. Some of them are very well made and have been found to give true readings after years of use and in spite of changes in temperature.

On the other hand, some instruments of the best make have been found after a little use to give very erroneous readings. I know a patient whose doctor put one of these spring instruments on him and measured his blood pressure at 170. The patient, who was a very intelligent gentleman, refused to put his faith in a spring and went at once to another doctor who had a mercury machine and who found the pressure to be 140. These small instruments may be used on account of their great convenience, but if one wishes to be sure of his results, he must check them up from time to time against a mercury instrument.

Space is not sufficient to mention many other conditions which may modify blood pressure measurements, such as position of the body, recent exercise, excitement, meals, etc.

In conclusion it should be said that the numerous sources of error pointed out should not in any way discourage the use of blood pressure instruments. Careful technic will reduce or eliminate some of the errors. Even if it turns out that we are often really measuring arterial hypertonicity, the clinical data on the subject retains its diagnostic and prognostic significance. A 12 cm. cuff should be used, and a manometer that one is sure of. For systolic readings the methods of palpation and auscultation are probably most reliable for general clinical use (remembering that the latter gives readings a few millimeters higher than the former); for diastolic determinations, the auscultatory method. Probably all these readings give values somewhat above true arterial pressure.

SUMMARY.

The soft tissues of the arm give rise to little if any error in blood pressure measurements. The resistance of hypertonic arterial walls has a greater influence, and perhaps at times produces large errors; although calcareous arteries may not give rise to an appreciable error. A cuff at least 12 cm. wide should be used. Palpation and auscultation systolic readings have simplicity and definiteness to recommend them.

Experiments are reported which show the amount of variable error in palpation systolic readings for two observers. Similar experiments to show relation between palpation readings and auscultation readings for systolic pressure.

For diastolic pressure determinations the auscultatory method has the advantages of ease and definiteness of reading. Types of manometers are considered. Mercury instruments should not be used for oscillatory readings.

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A CASE OF HEMOGLOBINURIC FEVER.

DR. HARRY B. REYNOLDS, Palo Alto.

Hemoglobinuric or "Blackwater Fever" occurs in the United States almost exclusively in the Southern States from Texas east, being most frequent in the lower Mississippi Valley.

Its occurrence in California is such a rarity as to warrant the report of the following case which was seen by the writer in association with Dr. J. E. Chapin of Redwood City:

Tony D., aged 24, married, has one healthy child and is a bartender by occupation. Does not know of having had any of the childhood diseases. Denies syphilis. Does not know of having had malaria. Is a very moderate drinker. Has lived for many years around New Orleans. Was in California several years ago. The past four years has been in New Orleans.

The patient had been in California only one week prior to the onset of the present attack, coming here direct from New Orleans. Five days before leaving that city he left his work because of malaise, fever, chilliness and aching of the limbs. Took home remedies for twenty-four hours. Then consulted a physician who gave him some capsules. He took only one or two of these and then took a large drink of whisky after which he felt better. He does not think he took quinine unless the small capsules given by the physician contained some. In that case it could not have been more than six grains in all.

The next day he returned to work. Three days later he left for California, was en route four days, and seven days thereafter was taken in the following way:

During the afternoon of Saturday he had some fever and malaise and at ten p. m. had a violent chill. The chill was repeated twice during the

next twelve hours without periodicity. He was seen by Dr. Chapin on Sunday night after a fourth chill and was found to have a temperature of 104°.

Monday morning he was severely prostrated and his face had taken on a marked pallor. He had vomited incessantly during the night being unable to retain even water or ice or champagne. The vomiting was severe with much retching and the vomitus was clear water or bile-stained fluid. The urine was dark red.

On this day I saw the patient in consultation. He was very pale with a greenish yellow color under the pallor. The temperature was 102° and the pulse 110. Heart, lungs, abdomen, negative. Spleen could not be felt and did not percus large. Reflexes unchanged. No enlarged glands.

Urine, about 8 oz. passed every four hours, was of port wine appearance, transparent and contained no sediment. On boiling a specimen it boiled solid in the test tube. Hemaglobin 70%. Red blood cells 4,200,000.

Patient was taken to hospital. Bimuriate of quinine was given hypodermically with nutritive and stimulating regime and absolute rest.

During the next day improvement was noted. The fever came down to 99° with pulse of 100. Urine became clear with no albumin or blood pigment. Vomiting ceased and patient rested easily.

On the next day, however, a chill reappeared, the temperature rose, the patient became more prostrated and was delirious. Vomiting was severe and incessant. Hemoglobin again appeared in the urine and the blood rapidly paled. In twenty-four hours the hemoglobin record dropped to 30% and the red cells to less than 2,000,000.

There was no response to stimulants and the patient died five days after the onset of the attack.

A blood culture kindly taken by Mr. Arthur Meinhard showed no growth. The blood smears examined minutely showed no plasmodia.

Samples of urine were submitted to Prof. Robt. E. Swain of Stanford University who very kindly examined them and reported as follows.

Two samples were submitted neither of which contained maximum amounts of hemoglobin. One was almost clear, being taken just prior to the recrudescence of the hemoglobinuria.

"Stanford University, Calif.,
"October 18th, 1913.

"The analysis of urine submitted yielded the following data:

Substance	Sample No. 4. Gms. per liter	Sample No. 4. % of total N.	Sample No. 6. Gms. per liter	Sample No. 6. % of total N.
Total nitrogen.	17.73	.....	8.555	.....
Urea	13.60	78.50	7.09	80.80
Creatinine	0.489	2.82	0.269	3.15
Ammonia	1.785	10.30	1.086	12.70
Creatine	Lost	.....	0.069	0.81
Uric Acid.....	.....	1.95	.....	2.12
Albumin	.....	1.10	.....	0.10
Specific Gravity	1.0275		1.0107	

"Number 4 carried hyaline casts, cystine and phosphates in the sediment. In solution were notable amounts of methaemoglobin, and haemoglobin. A bare trace of blood coloring matter was present in No. 6.

"Since neither sample represented the entire collection of a 24-hour period, the results cannot be expressed on that very desirable basis, and the data on grams per liter are of little importance owing to the wide possible normal fluctuations in volume and specific gravity, and consequently in the weight of any given constituent per liter. Accordingly, of the quantitative data only those in terms of per cent. of total nitrogen are of real service. Here we find ammonia, uric acid, and creatine running abnormally high. For ammonia the figures are twice what may be regarded as a high normal amount. Uric acid, usually 1% or less, is high at 2.12%. Creatine is not a normal constituent of human urine, unless ingested preformed in meats, meat soups, or meat extract. If the patient was given extract of meat in any quantity, it could easily account for the creatine found. Otherwise, it indicates an abnormal breaking down of muscle tissue. The large amount of albumin in No. 4, and the smaller amount in No. 6, are plainly pathological, accompanied as they are by casts.

"(Signed) ROBERT E. SWAIN."

MADELUNG'S DEFORMITY.*

By HOWARD F. ADLER, M. D., San Francisco.

The condition known as Madelung's Deformity or manus valga, as he chose to call it, is not only an extremely rare condition, but is also of interest because so few know that the same conditions which give rise to pes valgus or club foot, may cause an analogous deformity to the wrists.

Our first records to anything of the sort date back to 1825, when Begin first noted among adult male workers in the cloth factories of France, and especially those engaged in continuous heavy work with press levers, that there occurred quite often a painless, forward dislocation of the wrists. Nine years later rather indefinite reference was again made to this condition by the French surgeon Dupuytren, to whom this discovery has wrongly been attributed by some, since we now know that in all probability all these cases were a form of professional deformity. From 1834 to 1878 there are about seven records of similar wrist subluxations, but, for various reasons, we cannot class them as typical Madelung deformities.

In 1879, before the Deutsche Gesellschaft fur Chirurgie, Madelung first presented a clear picture of this unusual condition. He described an anatomical dissection on a twenty-two-year-old woman, which he had found at autopsy, and which had existed since childhood. Its chief points of interest were as follows: Forward subluxation of the wrists produced by an inclination of the articular surface of the radius toward the palm, caused in turn, by a forward bowing of the long axis of the radius at its epiphysis; prominence of the dorsal edge of the bone, and atrophy of the palmar aspect, and finally prominence of the lower end of the ulna dorsally. He gives a detailed description of five

* Read before the San Francisco County Medical Society, January 20, 1914.

such cases, and states that he has seen twelve altogether. Stetten summarizes Madelung's paper in the following way: The condition is due to a disturbance of the growth of the joints, and has its analogy in pes valgus, genu valgum, and scoliosis; that it develops spontaneously never before thirteen, and rarely after twenty-three, usually with pain, and limitation of extension of the hand. It is usually bilateral, twice as frequent in females as in males, occurs usually in the working classes, and reaches its height in from one to two years. The main factor in its formation is the more powerful action of the flexors of the forearm over the extensors. Continuous hyperflexion, stretching the extensor tendons and posterior ligaments over the dorsum of the radial epiphysis exerts a forward force, and bowing toward the palm. Pressure of the carpus on the anterior edge of the lower ex-

tremity of the radius produces atrophy, while the release of pressure from the posterior edge allows a hypertrophic growth. The disease is one of the growth period, and is due to a primary weakness of the bone, or perhaps to a disturbance of nutrition. Treatment should be palliative by means of a leather wrist band. He suggests for the deformity, the name of manus valga.

In the discussion, Czerny, Hirschberg, and Von Langenbeck took part, and all claimed to have seen similar cases. Since 1879 numerous cases have been reported. Duplay in 1885 cited a case in which he performed linear osteotomy of the radius with great success, and notes that the condition resembled very much the genu valgum of adolescence, described in 1879 by Mikulitz. In 1888 Von Bergman placed a typical case on record, and in 1891 Hoffa described an orthopedic apparatus which he constructed for a case. A little later the Roentgen rays were employed to throw additional light upon the subject. In 1901 Kirmisson published a case of the reverse type, with a backward subluxation of the wrist, and Stetten in 1909 published a second case with a most scholarly résumé of the entire subject, which contains sixty-four case reports, of which two were of the reverse type. I have been able to find five more since then, making a total of sixty-nine in all.

The case I wish to present this evening, came to the Stanford Medical Out Patient Department, on December 10, 1913. She complained of shortness of breath, dizziness, nervousness, and difficulty in walking, all of which was subsequently explained on the grounds that she was suffering from aortic and mitral regurgitation, diabetes mellitus, chronic interstitial nephritis and arthritis deformans. The patient herself had paid but little attention to her wrists. So far as she knew they had always been deformed, and as they had never troubled her, she objected to the attention which was called to them. She denied ever having done especially hard work, and physical examination showed no traces of rickets. Inspection of the wrists shows a marked prominence of the radius and ulna dorsally, especially the latter. On the palmar surface the carpus is very prominent, and the wrists appear very thick. There is no pain attendant to mobility, and the latter is not restricted to any degree, except slightly on extension of the hands. The bowing of the radius is not well marked as it is in many cases of this deformity. At a glance, it reminds us of a reversed collis fracture.

The pathology of a typical case may be briefly described as follows: A deviation of the inferior articular surface of the radius toward the palm in the anterior group of cases, and toward the dorsum in the posterior group. In forty-seven of Stetson's sixty-four cases, bowing of the radius was found, with an exaggeration of the normal curvature of the bone towards the ulna. As a direct result of this, the joint surface of the radius is turned toward the ulna, and there is also some shortening of the radius. Exostoses near the epiphysis are frequently seen. The ulna may also be slightly bowed, but usually plays a passive part. Due to the displacement of the articular surface of the radius, the carpus is forced forward and toward the ulna, the small bones of the wrists naturally having to adjust themselves accordingly. The proximal row of carpals usually show a wedge

formation, instead of its normal arch, and the rest fit in as best they can.

The deformity is bilateral twice as frequently as unilateral, and seven times as frequent among females as in males. It begins usually between the ages of eight to eighteen, occupation playing a small part in its production. The general condition of the patient does not seem to be responsible for this deformity, although in one-third the cases, heredity seems to play a predisposing part. According to Stetten, an irregular ossification seems to be responsible rather than late rickets, to which it has been attributed by other writers. The forward or backward subluxation according to the former, is due to the fact that the bones follow the line of least resistance, while others claim that the pull of the flexor or extensor tendons is the causative factor. Since 1909, Homuth and others have suggested that a disturbance of the internal secretions especially before puberty, may act as an underlying cause for a local osteomalacia, with the thymus gland as a possible seat of the trouble. The deformity develops spontaneously, reaching its height in from two to three years, with a slight pain, fatigue, weakness and limitation of motion. Treatment by linear or cuneiform osteotomy is usually successful and makes the prognosis a good one. This should not be attempted until after the deformity has reached its height.

The differential diagnosis of Madelung's deformity must be made from congenital, traumatic, professional, hysterical and post-inflammatory deformities of the wrists, rickets, epiphyseal, radial, and carpal fractures, exostoses, and spinal arthropathies from tabes and syringomyelia.

My thanks are due to Dr. Wilbur for his permission to present this case, and to Dr. Boardman for the plates. (I also wish to acknowledge my indebtedness to Dr. DeWitt Stetten, from whose article in the Journal of Surgery Gynecology and Obstetrics, January, 1909, most of the material for this paper has been obtained.)

CLOSURE OF THE ABDOMEN IN THE FACE OF SEPSIS. REPORT OF ONE HUNDRED CONSECUTIVE CASES.*

By J. D. DAMERON, M. D., Stockton.

Years of efforts at drainage and repeated attempts to follow methods advocated by authors and surgeons of large clinics, have led me to the same unsatisfactory end results. Consequently, over three years ago I arbitrarily abandoned all abdominal drainage and have since completely closed all abdomens, regardless of operative findings. After having operated on over one hundred cases with free pus in the abdomen, I find nothing to make me at all consider returning to drainage. The following questions have constantly recurred:

First: May it not be that the constant draining of the serous exudate is robbing the peritoneum of one of its protectors?

Second: No matter how careful we may be, does not the constant dressing over the open peritoneum lead to secondary infection or constant reinfection?

In the experience of the last three years, cases of practically every type have been included. Operations for perforated gastric ulcers, perforated typhoid ulcers, exploded appendices, pelvic and general peritonitis, have all been followed by closure of the abdomen, irrespective of the amount of free pus, with practically the same end results, namely, very moderate gas pains, quick and easy convalescence and apparently no post-operative complications. I have gone even further and have performed an ileocecostomy in the face of peritonitis with perfect results. It is now clearly proven to myself at least, that closure of the abdomen is the procedure to be followed in all cases, but the surgeon must seek and remove the exciting cause.

Not only has the immediate post-operative experience been more pleasant, but the final results, though as yet a little early to judge, in some of the cases, it seems to show much encouragement. No symptoms of adhesions, no secondary operations have as yet been needed. Again, in these one hundred cases I have had but one fecal fistula, and that in a case which, at the solicitation of the doubting physician for whom I operated, I made a stab wound into the peritoneum, with the result that no pus was found, but adhesions and a fecal fistula followed.

In many of the cases I have had union by primary intention. In all the peritoneum has united and held, but in some the superficial fascia has become the seat of a suppurative condition, which requires sensible, steadfast treatment to prevent a phlegmonous advance.

Taken on the whole, the wounds have been no harder to control than in the former days of drainage, and all that now lacks perfection is the prevention of the wound infection; in all cases where cultures have been taken they have proven to be B. Coli. I have had rather extensive fascia destruction, but not any more than in a drained wound, for this infection of the abdominal wall is due to contamination from free pus present in the abdomen at the time of operation. No hernias have been reported.

During these three years I have drained three cases, as comparative demonstration at the request of physicians, and have found the same former results, much and long continued pus drainage, gas distention and gas pains, and in one case death.

Along with the successes I must report one failure, that of a Mrs. B——, who though no pus or area of inflammation could be demonstrated on the table, the patient died on the sixth day after the operation from fulminating peritonitis.

THE CHARTS OF MY HOSPITAL OF THE LAST FIFTY CASES SHOW THE FOLLOWING:

Average number of days following operation before temperature touched normal, five and one-half.

Average number of days following operation before temperature remained normal, eight and one-half.

Average number of days following operation before patient discharged, nineteen and one-half.

CASE HISTORIES.

Case number 319: Miss F, age twenty years.

* Read before the San Joaquin Valley Medical Society, 1913.

Temperature, one hundred and three and six-tenths. Pulse, one hundred and thirty-six. Vomited a greenish fluid. Abdomen distended and tender to touch. She gave a typical history of a ruptured appendix. At operation large quantity of free pus in abdomen and necrotic appendix was found. Appendix removed, abdomen sponged out and complete closure of same. Infection of wound followed and on the sixth day the stitches were removed. On the tenth day, at the earnest solicitation of her physician, I reopened the abdomen and put in a drain. No pus was found in the abdominal cavity, peritoneum and intestines not inflamed, but a fecal fistula developed. Her temperature was never normal until the thirteenth day after the operation. She left the hospital on the eighth of November, 1912, thirty-five days after the operation, with a small fecal discharge of pus, periodical rises of temperature, and never fully recovered for twenty days thereafter. I firmly believe had we not interfered with the original wound, her recovery would have been shorter, safer and without any fecal fistula.

Case number 591: Mr. L., single, age twenty-six years, family and past histories negative. Present history: Patient brought to hospital after several days' observation. Entered March 15, 1913. Temperature, one hundred and one and six-tenths. Pulse, one hundred. Respiration, twenty. Operated on March 16, 1913, a. m., and one-half ounce of free pus found in abdomen. Appendix removed and abdomen closed. Temperature touched normal on the third day and remained normal from the seventh day on. On the sixth day some induration around wound and temperature of one hundred and one, two stitches removed and about a dram of bloody pus removed. On the seventh day remaining stitches removed, but wound not opened. Slight drainage necessitated daily discharge for ten days. Twenty days following operation, patient discharged and took train home, fifty miles distance. Wound healed.

Case number 705: Mrs. J., age twenty-nine years. Family negative. Past history up until marriage at the age of sixteen uneventful. In the following two years after marriage, patient aborted six times (denying any interference), ranging from two to six months' duration. Then three healthy children were born. One year previous patient had aborted a six-months' fetus. Patient six months pregnant; on April 28th was suddenly seized with cramps and diffuse abdominal pains, then pain localized in right side over McBurney. Temperature said to have been normal. At this stage I was called in consultation. Temperature, one hundred and three and six-tenths rectal. Pulse, one hundred and eight. Respiration, twenty-eight. She was moved to hospital. Abdomen opened. Quantity of free pus in abdomen. Appendix necrotic, removed and abdominal cavity sponged and closed. Temperature never rose above one hundred and one. Touched normal on the fifth day and remained normal from seventh day on. Fifth day two stitches removed and two drams of foul-smelling pus evacuated (culture B. Coli.), discharge ceased. Tenth day after operation wound ceased to drain. Twelfth day after operation uterine contractions set in, patient aborted a six-months' fetus twelve hours after pains began. No complications followed. Discharged twenty days after operation. Skin and deeper structures intact.

TECHNIC

An incision three inches above the pubes is made through the right rectus muscle, down to the peritoneum. At this step I have wiped the edges with Harrington iodine and formaline in the hope to prevent infection, but as yet nothing has proven a success.

I then open the peritoneum and if there be free pus, I use hot gauze sponges, wrung from a salt solution, just as hot as they can possibly be borne by a gloved hand, and I never use anything but hot sponges, as they seem to stimulate the bowel and promote the ready removal of the pus and exudate.

I then start in search of a clear field if possible and begin to wall off the healthy from the infected. This is done by long packs of gauze sponges, six inches wide by three feet long.

I now start my search for the exciting cause and continue same until found and removed, taking with it every suspicious looking material.

I try to handle the small intestines as little as possible, yet if I find them agglutinated and suspicious of a pus sack, I thoroughly investigate and if pus be present, I treat the sack the same as the primary focus. After all suspicious material has been removed, abdomen thoroughly cleansed and dried, I sew it up as if it were a clean wound. It is now that the interesting part of the after treatment begins.

The temperature usually drops in from twelve to twenty-four hours, but on the third or fourth day the temperature starts up again. This is your warning that there is infection in your wound. At this time you may not have free pus upon inspection, but you will notice that the wound is tender and does not present a healthy appearance. Remove one, and only one, of your sutures in the lower angle of your wound and make steady pressure from above down.

If necrosis is not sufficient as yet, it will be in the next twelve hours. I now remove all primary dressings and apply hot permanganate stupes and keep them hot, and have the nurse try to express pus after each dressing. You must attend to it yourself at least twice daily, and should you notice a suspicious hardening under the skin some distance away from original wound, immediately "go after it," make free incision into it so as to prevent an extension of the phlegmon.

CONCLUSION.

1. Practically total absence of post-operative distention and gas pains.

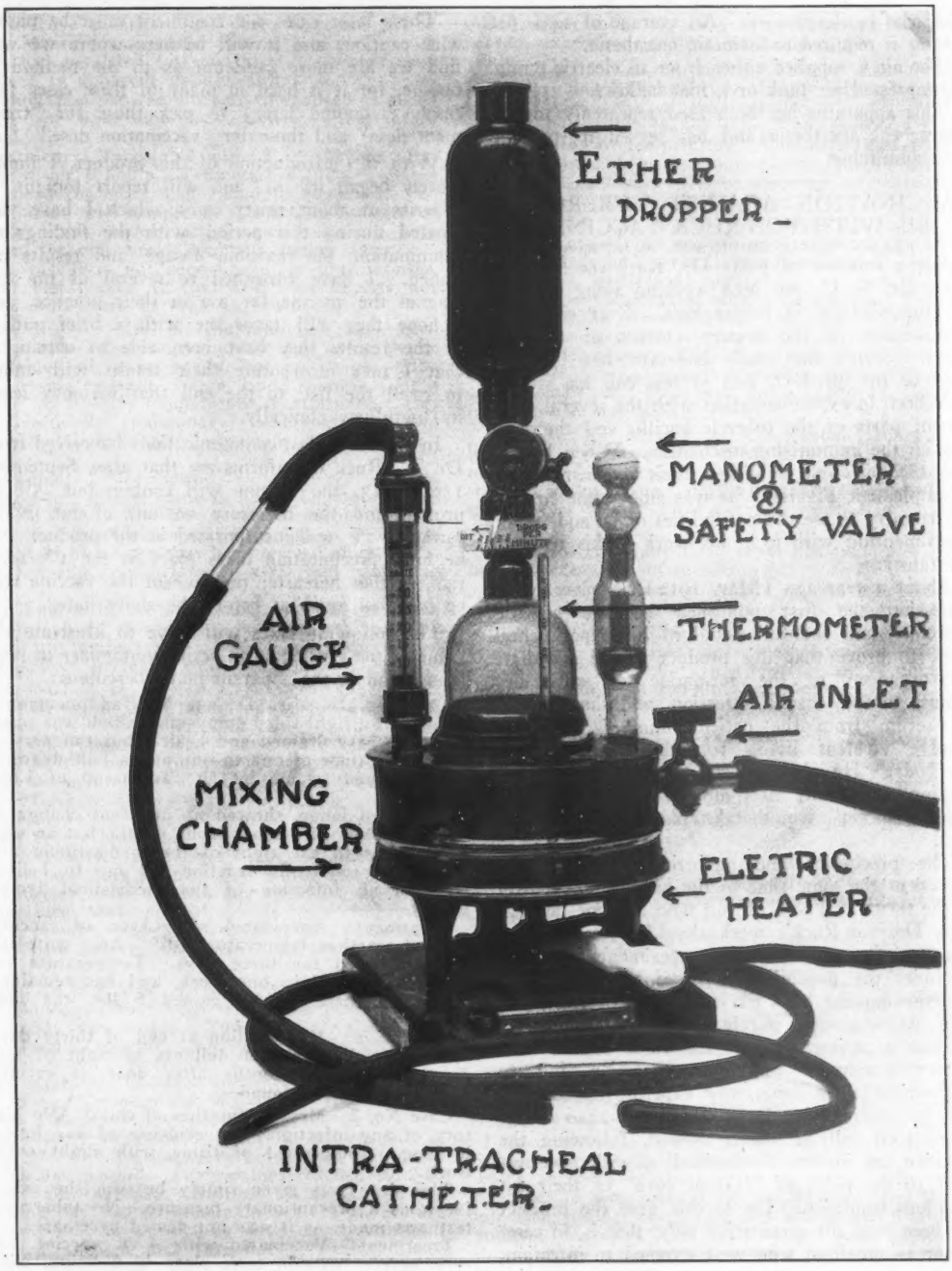
2. Drainage of abdomen is at all times unnecessary.

3. The exciting causative agent must be sought for, found and removed.

4. The abdomen should be as securely and completely closed as in a clean case.

5. Never close these wounds with a subcuticular stitch.

6. Always use interrupted sutures silkworm gut, through skin subcuticular fat, including the fascia of the rectus muscle. Never remove all the deep sutures at the same time, so as to prevent contraction of the skin, leaving an ugly scar.



INTRATRACHEAL ANESTHESIA.

By SAXTON POPE, M. D., San Francisco.

This is the present stage of development of the intratracheal anesthesia apparatus in use at the University Hospital:

Its principal features are compactness, a means for the accurate regulation of the proportion of ether and air, electric heating to volatilize the ether, and of course the usual pressure and safety valve attachments.

The volume of air passing out of the machine is registered by a revolving float, bobbing up or down in a graduated glass cylinder—an idea adapted from Connell's apparatus.

Having the number of drops per minute and the liters of air per minute known, the percentage of

From the Research Department of the University of California.

ether can be determined. An average of 14% per volume is required to maintain anesthesia.

The air is supplied either from an electric pump, a compressed air tank or a foot bellows.

This apparatus has been used repeatedly for intratracheal anesthesia and has served its purpose most admirably.

VACCINATION AGAINST TUBERCULOSIS WITH VON RUCK VACCINE.*

By FRANK NEALL ROBINSON, M. D., Monrovia.

For a number of years Dr. Karl von Ruck of Asheville, N. C., has been working along the line of immunization in tuberculosis. Ever since the introduction of the watery extract of tubercle bacilli (1897) his whole endeavor has been to improve this product, and to this end his studies have been in experimentation with the several component parts of the tubercle bacilli, and their action on the immunizing mechanism. When Bordet and Gengou first published their experiments in "Complement Fixation" he was among the first in this country to see the possibilities of it, and began experimenting with it in his work in his research laboratory.

About a year ago (May, 1912) he gave to the profession the first published account of the "vaccine" and the full detail of his experimental work to prove that this product would stimulate the organism to the formation of antibodies against tubercle bacilli infection, and showed that the serum from the patient immunized would dissolve virulent living tubercle bacilli outside the body. He also showed by the "complement fixation" test that, after an injection of the vaccine, "fixation" would take place in about five days.

The precipitins and agglutins were also increased at the same time as the bacteriolytic power of the serum. Those of you who are not familiar with Dr. von Ruck's work should write him for his reprints covering these experiments, as time precludes the possibility of my incorporating the immense amount of work in a paper of this character, whose scope is purely of a clinical nature.

These experiments prove the value from a laboratory standpoint of this preparation, but to substantiate these laboratory experiments on animals he vaccinated a large series of human beings (over 400), all of whom showed, following the injection, an increase in antibodies, with improvement to the point of "clinical cure" of their tuberculous condition. Up to this time the product had been used for vaccination only, that is, in cases of non-tuberculous, who were exposed to infection, such as children, and older ones in contact with active tuberculous, as well as in cases of glandular, bone before secondary infections, and latent pulmonary lesions; recently he has recommended it in cases where, while active, secondary infection has not taken place, as in pulmonary and glandular, and in bone lesions, especially where no sequestra are present or secondary infection with pus organism has not taken place—as a method of treatment.

* Read before the Foothill Medical Society, October 13, 1913.

These later cases for treatment must be picked with caution, and it will be here where we will find we are more in doubt as to the method to pursue, for it is hard in many of these cases (see case 13, quoted later) to pick those for "treatment dose" and those for "vaccination dose."

With the introduction of this product, I immediately began its use, and will report tonight on a series of about thirty cases, which I have vaccinated during this period, with the findings on examination, the reaction, dosage, and results obtained. I have furnished to several of my colleagues the vaccine for use in their practice, and I hope they will favor me with a brief outline of the results they have been able to obtain, so that I may incorporate their results with mine, to swell the list, to the end that we may learn its usefulness clinically.

In one of the last communications I received from Dr. von Ruck he informs me that after September 15th, 1913, the vaccine will contain but .5% of protein and the necessary amount of fat, while formerly 1% was incorporated in the product, but he finds precipitation takes place in the 1% solution, so that hereafter the dose of the vaccine will be twice as much as before the above date.

The following cases will serve to illustrate the value of the vaccine as an active immunizer in later lesions and in the apparent non-tuberculous:

Case No. 1. Miss D., age 8.—Had pneumonia, followed by right-sided empyemia, which was operated and case drained and healed, but ran persistent temperature of one to one and a half degrees; case referred to me by Dr. Townsend of Long Beach.

Examined lungs, showed no apparent change of breath sounds of a tuberculous nature, but an area of dullness to the right of the mediastinum and a positive tuberculin reaction led me to believe we had an infection of the mediastinal lymph glands.

Treatment: Vaccinated with .3 cc. of vaccine, marked reaction, temperature 101°. Area quite red and infiltrated for three days. Temperature receded to normal in one week, and has remained normal to date. Child gained 5 lbs. the first month.

Conclusion: Examination at end of thirty days showed smaller area of dullness to right of mediastinum. Four months after dose of vaccine area could not be found.

Case No. 2. Mrs. D. (mother of child). No history of any infection. No evidence of any lesion in lung. Complained of tiring with slight overwork.

This dose was given simply because she asked for it as a precautionary measure. No tuberculin test was made, as it was not demed necessary.

Treatment: Vaccinated with .4 cc. vaccine. A very severe reaction took place in 6 hours, with headache, backache, limbache, temperature 102°, arm red and infiltrated. She was ordered to bed, where she remained for 48 hours, when reaction began to subside, temperature began to fall on the third day and by the fifth day was back to normal. She had a sore arm for eight days.

Conclusions: Patient gained 4 lbs. the first month, and when last seen, four months after vaccination, was in good health and had gained in all 10 lbs., weighing more than she had ever weighed in her life, and felt better than for years. This case emphasizes the latent case.

Case No. 3. Mr. D. (father of child).—Had never been strong all his life, took cold frequently. Had

had to leave position nine years ago and go to Sierra Madre for a winter, owing to a dry cough which had persisted for months, since which time has been in apparent good health.

Examination showed old scar (diagnosed as such) at apex of right side, no activity. Temperature normal.

Treatment: Vaccinated with .3 cc. vaccine. Reaction within 6 hours. Temperature 101½°. Backache, headache, sore arm. Had to remain in bed for 24 hours. All symptoms of reaction disappeared in three days, except arm, which remained sore and red for one week, gradually fading away.

This case was not seen again for four months, patient had gained 12 lbs., and says he has not felt as well since he was 16 years old.

Case No. 4. Mrs. N. (nurse).—Has been constantly with tuberculous patient for three years. Complained of tiring easily, but no cough. Has been losing weight lately and running slight (99 2-5° to 99 4-5°) temperature in afternoon. Has been frequently (pulmonary) examined, and told was not tuberculous. Tuberculin reaction positive.

Treatment: Vaccination with .3 cc. vaccine. Reaction not severe, came in about 12 hours, headache and body ache. Temperature reached 100° as the highest in 24 hours and then fell to normal in the next 24 hours, and has been normal since. Arm sore (red and swollen) for a week, and painful to touch.

The fatigue in the afternoon remained with the case for about thirty days, notwithstanding she carried no temperature, when it disappeared and she has been perfectly well to date.

Case No. 5. D. R., age 12.—Mother tuberculous and uncle, who lived with family for a number of years, was tuberculous, but came south and received an "apparent cure." Cervical glands enlarged. Tired easily on exercise, would have afternoon temperature of 99 2-5° to 99 4-5°, very nervous. Took cold very easily.

Treatment: Vaccinated with .2 cc. vaccine at 4 P. M. Severe reaction. Temperature 102° to 103°. Arm very sore. Could not dress, so remained in bed for two days. Third day temperature gradually subsided, until on fifth day following injection, temperature was normal. This boy improved, gained weight, and the tendency to colds left; glands had entirely disappeared in three months. Tire left.

Case No. 6. Mrs. H. G. R., age 38, mother of two children—Never been well since birth of second child (five years). Tired easily. Could not gain weight, appetite poor. Fall colds accompanied by cough. Nervous.

Examination: Changed breath sounds, right upper lobe. Temperature 99 2-5° to 100° on fatigue. Tuberculin test positive.

Treatment: Vaccinated with .3 cc. vaccine at 10 A. M. By bedtime severe reaction, with arm swollen and painful. Temperature reached 101 2-5° by 4 P. M. that day. Restless all night, and the following day had to remain in bed. Temperature gradually fell to normal by fifth day. Arm still remained swollen and sore for a week. Three months afterwards had gained 5 lbs., feeling strong, and has had no temperature since the fifth day following vaccination.

Case No. 7. Miss E., age 23.—Brother in terminal stage of tuberculosis. Temperature 99° to 99 3-5° in afternoon, tired easily, slight cough.

Examination: Changed breath sounds, upper left lobe. Tuberculin test positive.

Treatment: Vaccinated with .3 cc. vaccine at 11 A. M. Slight reaction. Arm sore and red. Temperature 100° by 8 P. M. Reaction passed off in 36 hours and temperature normal at the end of second day. Cough had disappeared by end of first month. Gained in weight 4 lbs. first month. The girl was quite neurasthenic, but by end of third month most of these symptoms had disappeared, excepting girdling headache.

Case No. 8. A. S., age 6.—Mother died with pulmonary and laryngeal tuberculosis. No enlarged glands. No signs of tuberculosis.

Treatment: Vaccinated with .2 cc. vaccine. No local reaction or temperature. This case illustrated the effect of a dose on a non-tuberculous showing the diagnostic value. Notwithstanding no reaction agglutins and precipitins increased.

Case No. 9. R. W., age 6.—Father tuberculous. Had been active, but was an apparent cure at this time. Tonsils and cervical glands enlarged. Anemic, listless, restless at night.

Treatment: Vaccinated with .2 cc. vaccine. Temperature 100°. Area slightly red and indurated. Temperature returned to normal in 48 hours and soreness left arm on fifth day. One month after vaccination cervical glands markedly diminished to size of small pea. Slept well, color improved. Left for home in the Middle West.

Case No. 10. Mrs. P. H. C.—Husband tuberculous, but at present an apparent cure. She showed no signs of tuberculosis. Treatment: Vaccinated with .3 cc. vaccine. Slight reaction, arm sore, temperature 99 2-5°. Temperature normal in three days.

Case No. 11. Baby C., 2 years old (daughter of above).—No signs of tuberculosis.

Treatment: Vaccinated with .1 cc. vaccine, slight reaction, slight sore arms, no rise in temperature.

Case No. 12. Miss S., age 26.—Slight cough attributed to cold, tires easily, loss of weight. Temperature 99° to 99 4-5° in afternoon and evening. Appetite poor, lost weight, sleep poor.

Examination: Changed breath sounds, upper right lobe.

Treatment: Vaccinated with .3 cc. vaccine. Reaction in 24 hours. Arm sore and red. Temperature 102° for 24 hours, when dropped to normal on second day and normal since. One month after cough gone, gained 4 lbs., slept good, tire gone, breath sounds improved.

Case No. 13. Miss D., age 25.—Active lesion found in the upper right side with moisture upon deep breathing and coughing. Tubercle bacilli found in the sputum, but she raised only a small quantity of sputum each morning. Temperature 100° to 100 2-5°. Cervical glands enlarged both anterior and posterior.

Treatment: Vaccinated with .3 cc. vaccine. Marked reaction within 12 hours. Temperature 102½°, backache and headache. Temperature fell to 99° within three days. Arm remained sore for 10 days. Temperature remained at 99° for almost a month, during which time she gained 22 lbs., felt fine, ate well, slept well. No expectoration, coughed slightly in the morning. Second dose of vaccine .4 cc. given at the end of 30 days. Slight reaction in both temperature and arm, which subsided at the end of 48 hours, with the temperature remaining at 99° for 20 days, after this injection, during which time this girl gained 6 more pounds. Exercise now allowed her each day, in the form of a walk, and a third injection at the end of 30 days from the second injection with .6 cc. vaccine. Breath sounds have entirely changed over the area involved, and no moist rales, but evidence of scar. The balance, 17 cases in all, are of no special interest from a clinical standpoint, excepting that they proved to be non-tuberculous, responding in no way to the injection of from .4 cc. to .2 cc. of the vaccine. In a number of these cases, I carried out the precipitin and agglutin tests and found these tests showed marked increase, following the injection.

I submit this simply as a preliminary report and hope at some future time to follow it with a list of cases treated by the vaccine.

TREATMENT OF GONORRHEA IN THE FEMALE.*

By JOHN C. SPENCER, A. B., M. D., San Francisco.

Before proceeding to the consideration of the subject named in the title, particular stress is laid upon making certain of the diagnosis of gonorrhea. The time-honored method of making a smear on a slide or cover-glass, then staining and demonstrating the presence of intracellular diplococci, will not stand the test of more modern methods of accuracy. Until within fairly recent times it has been customary to rely upon the Gram-stain as practically a specific diagnostic stain. This stain acts identically similarly with the micrococcus catarrhalis. As is well known, the latter organism morphologically so closely resembles the gonococcus that the two are only distinguishable culturally.

Cultures—The gonococcus is notoriously difficult of cultivation. It may be obtained, when obtained at all, usually by the use of material from a recently infected case. The culture-medium most commonly resorted to is either a blood-agar or an ascitic-agar slant. As a control, an agar slant should be made also, which is kept at room temperature. A growth upon the latter which morphologically resembles the gonococcus will undoubtedly be the micrococcus catarrhalis, since the gonococcus will not grow upon plain agar.

Complement-Fixation Test—This test, like all those of this character, is a group reaction and while if positive, is quite reliable, if negative, does not exclude the possible presence of a focus of gonorrheal infection somewhere in the body. Thomas[1] in a recent article says: "In women, positive reactions are rarely obtained unless the cervix has been involved." Thus while the complement-fixation test may be regarded as a valuable diagnostic adjuvant, at present it is only such, hence the cultural test is the most reliable one. At least it eliminates guesswork as far as possible. To this the patient is entitled.

As in men, so in women, there are all possible clinical combinations of gonorrhea, depending on virulence of strain and natural resistance of the individual. Many women regard a leucorrhea, especially when not profuse, as a minor, though incidental, attribute of the sex. Some women are so scrupulously cleanly that although there may be a catarrhal discharge from the uterus, by assiduous douching, even daily, it is kept flushed out, so that when questioned they will honestly deny that there is a discharge. Yet men with an unquestionable gonorrhea will present themselves with a history of coitus with but one woman. Sometimes for the reason above stated, the woman when charged with being the source of the infection, will indignantly deny the charge. If examination is sought or permitted and made sufficiently searching, as a rule, the presence of a gonorrhea may be demonstrated somewhere in her genital passages, most commonly in the cervical canal. Especial stress is laid on the necessity of a most careful search in the cervical canal for the possible presence of gonococci, when the ordinary evidences are apparently lacking or at least not readily discernible. It frequently happens that no catarrhal secretions will be seen within the os externum, and cervix and vagina will appear perfectly clean, yet by a very careful scraping of the cervical mucosa with the platinum loop, the epithelia and the interepithelial spaces may be sufficiently disturbed so as to yield material, which on culture will demonstrate the presence of typical gonococci. This procedure, if unsuccessful at first, may be repeated, possibly after a preliminary irritation with a ½-1% solution of silver nitrate, until the cervix has been eliminated as a possible source of infection.

When gross clinical evidences are lacking, one should not overlook Skene's glands at the external urethral meatus, and the ducts of Bartholin's glands.

As in men, so in women, each case is a law unto itself. No routine treatment should be attempted. The locus of infection should be established and the treatment applied according to the needs of each individual case. Certain basic principles of treatment are broadly applicable. The bowels should be kept freely open, preferably with a saline; food should be of the simplest character, reduced in some cases to a milk diet; the ingestion of any substance which is excreted through the kidneys and is notoriously irritating to the mucosa of the genito-urinary passages should be sedulously avoided; rest, preferably in bed, should be enjoined during the acute stages of the infection; there should be a daily bath, care being taken to avoid chilling of the surface, whereby local congestion may be augmented.

Vulvitis—When the infection involves the vulva diffusely, more especially the urethra, the patient will derive much relief from the local irritation by very hot sitz-baths, or by immersing the entire vulvo-anal region in a receptacle containing hot water or normal salt solution, having a temperature of 110°-120° F. If plain water is used one of the liquid soaps containing cresylic acid, a congener of phenol, may be used. The effect of the latter is not only cleansing, but slightly anesthetic, as well as germicidal. Supplementing this, there should be very hot irrigations at least three times a day, of not less than a liter of solution of one of the silver albuminate preparations, as argyrol or sophol (1-1000) or protargol ½-1%. After drying by gentle pressure, the vulva should be covered by a sterile pad which should be changed frequently. Some patients with very sensitive skins will develop a marked erythema, or even excoriations in the inguino-femoral fold extending on to the inner aspect of the thighs. These surfaces may be protected by some simple dusting-powder with Venetian talc as its chief ingredient.

The method of giving the irrigations should be carefully supervised to insure the contact of the fluid with every part of the vulva and the urinary meatus.

Urethritis—If the urethra is involved it should

* Read at a meeting of the Urological Section of the San Francisco County Medical Society, Dec. 23, 1913.

be irrigated secundem artem, with moderate hydrostatic pressure to secure the ballooning of the urethral folds, but not sufficient to cause the fluid to enter the bladder. The undesirability of this latter accident when only the urethra is involved is self-evident, and may be easily avoided with a little care.

Cystitis—If the infection shall have invaded the bladder, then the irrigations of the solutions above named should be intravesical, care being taken that not more than 150 cc. shall be allowed to run in at a time and be immediately voided. The last portion should be retained in the bladder for at least an hour or until the next emptying becomes necessary. These intravesical irrigations should be given at least three times a day in order to get the best results. As a relief for the accompanying tenesmus, nothing short of an opiate will give the relief afforded by a hot sitz-bath. The patient may enter this at as high a temperature as may be tolerated for the moment, then by allowing water of a still higher temperature to run in, the patient will be able to endure it very well. As an adjuvant a very hot vaginal irrigation may be taken while the patient is in the bath. These baths may be repeated one or more times during the day. Supplementing the local treatment some form of balsamic may be given by mouth, preferably the salycilic acid ester of sandal-wood oil or some preparation of the same oil, not calculated to upset the stomach. It must not be forgotten that large doses of this oil tend to produce a certain amount of kidney irritation evidenced by a more or less severe backache over the renal area. Tenesmus may be severe enough to require the giving of an opiate, preferably codein in a suppository or by mouth. Great care should be taken to cleanse the vulvo-anal region before introducing the suppository, in order to avoid possible infection of the rectum.

The urine should be diluted by the ingestion of a copious amount of water, either plain or some uncarbonated alkaline variety. The diet should approach the milk diet as closely as possible. As the urine begins to clear and the tenesmus to subside, with the abatement in the local evidences of inflammation, the disappearance of urethral discharge and gonococci, the energy of the palliative and dephlogistic measures may be relaxed. After the urine has completely cleared, at least three cultural tests of the urethral secretions should be made at intervals of a week, in order to determine the presence or absence of gonococci.

Vaginitis—The strict localization of gonorrhea in the vagina is quite exceptional. Depending on the severity of the lesion, the treatment may range between antiseptic and astringent irrigations, including the solutions of the silver-albuminate preparations, to, in the case of erosions, a spray with the patient in the knee-chest position, in order to balloon the vagina fully, of a ¼% tincture of iodine in 95% alcohol, or with a solution of picric acid 2-5 gmm. to one liter. If chronic erosions exist they should be touched with the solid stick of silver nitrate or, for greater convenience, a bead of the same melted on to a silver probe. When there are no erosions, the irrigations should be supplemented with tampons medicated with argyrol, protargol, ichthyol or formaldehyde, each in combination with glycerine.

The general hygiene of the patient must be similar to that in case of vulvitis.

Skene's Glands—When Skene's glands are involved, if the orifice of the duct may be found, which is usually fairly easy, through causing a minute drop of pus to exude upon squeezing, the gland may be destroyed by melting a bead of pure silver nitrate on a fine stiff silver wire and passing it to the bottom of the gland along the duct under local anesthesia, about in the way an infected paraurethral follicle in the male would be destroyed. If this prove ineffectual, then under local anesthesia a fine canaliculus probe such as is used in ophthalmological work may be passed to the bottom of the duct to act as a guide and the gland split wide open with a slender-bladed cataract-knife. The gland will heal from the bottom. The free drainage established by the incision will result in the destruction of the gonococci *eo ipso*.

Bartholinitis—Much pains should be taken to establish the presence or absence of infection of the vulvo-vaginal glands. Usually if infected there will be slight redness about the external orifice of the duct on the affected side. Pressure of the gland through the thickness of the labium majus on that side will cause a drop of pus to exude. In this will be found typical gonococci. Treatment of the gland may be by injection of one of the silver albuminate prepapartions through a very finely conical pointed all-glass syringe. This should be done daily. A frequent complication is the formation of an abscess of the gland. This should be treated on general surgical principles until fluctuation becomes evident, when the gland should be incised under local anesthesia if the abscess be small, or under general anesthesia if the treatment is to be more radical. The wound should be lightly packed with a gauze drain covered with ample pads. The packing should be continued until healing is well established.

Endocervicitis—According to figures in Norris' work,[2] the cervix is involved in 80% of the acute cases and in 95% of the chronic cases. In acute cases no treatment is permissible as directly applicable to the cervix. Only vaginal irrigations of the bland antiseptic solutions should be used, supplemented by glycerinated tampons containing one of the silver albuminate preparations or a half-saturated picric acid solution.

Some cases are practically chronic from the outset. The majority rapidly pass from the acute to the chronic stage. As an essential preliminary to the local treatment of the cervical canal, the thick plug of mucus filling and extruding from it must be removed by gentle swabbing with cotton-wrapped applicators dipped in some alkaline solution such as Dobell's. This is in order to insure more intimate contact of the medication with the infected mucosa, and *eo ipso* with the gonococci in the intercellular spaces. As to the choice of medication to be used in any given case, the treatment must

be largely empirical at the outset. It is well to start with a solution of one of the silver albuminate preparations, and feeling one's way, determine the degree of tolerance of the patient. If irrigations are used, great care must be observed that there shall be an unobstructed return flow of the irrigating fluid, alongside of the slender irrigating nozzle, otherwise the fluid may find its way through the internal os and cause painful uterine contractions, as well as render the endometrial mucosa liable to infection. Here again the dilute solution of iodine above referred to may be used. Many authorities resort to the application on a probe or applicator of full strength tincture of iodine or the Churchill's tincture. Others again, to the gentle introduction of slender wicks of medicated gauze up to the internal os. These are held in place by a glycerinated tampon. A thread should be attached to the lower end of the wick to insure its withdrawal with the tampon. The introduction of a foreign substance, as a wick, while insuring prolonged contact of the medication, is liable to cause erosions of the cervical mucosa. Some patients fail to improve under the application of the above form of treatment. In such event the application of a pure culture of lactic acid bacilli, or of yeast, owing to their destructive effect on the gonococcus, will bring the infection to an end. Another therapeutic measure very highly recommended by Swinburne of New York, is the application of electricity in the form of the high-frequency violet light current through a suitable glass electrode. The results are varied according to the patient. Howard Kelly in his work on gynecology highly recommends suitably repeated cauterizations with the actual cautery. In a personal letter to the author of the paper, he specifically recommends persistence in this form of treatment. It is certainly drastic and has not yielded the desired results in the author's hands, perhaps owing to the limited number of cases available. The cautery point should be slender and conical, and applied radially, removing it after each stroke in order that the patient shall not feel the heat in the vagina. The reaction is not severe and results in a slough which, after separation, leaves a clean surface.

Curettement of the cervix followed by application of some caustic, is mentioned only to state that in the author's experience it is not followed by the elimination of the gonococcus unless there is practical destruction of the mucosa by some substance like zinc chloride.

The most radical treatment of an intractable infection is an amputation of the cervix. With this method the author has had no experience.

In the foregoing, the attempt has been made, in a more or less sketchy manner, it is true, to give the results of the author's personal experience. No attempt has been made to exhaust the subject, since no reference has been made to the involvement of structures beyond the cervix uteri, such as the uterine endometrium, the adnexa, or complications arising in other more or less remote structures or organs.

1. Thomas, B. A.—Amer. Jour. of the Med. Sciences, November, 1913.
2. Norris, Chas. C.—"Gonorrhoea in Women"; W. B. Saunders Co., 1913.

ROENTGEN-RAYS AND MESOTHORIUM IN GYNECOLOGIC PRACTICE: REPORT ON THEIR APPLICATION AT SEVERAL GERMAN UNIVERSITY CLINICS FROM PERSONAL OBSERVATION.

By HENRY J. KREUTZMANN, M. D., San Francisco.

Before I start to narrate my observations on application of Roentgen-rays and of Mesothorium in diseases of women, as I saw it at different German university women's clinics during a visit in October-November, 1913, I wish to make a personal remark.

Having enjoyed a good medical education with excellent clinical facilities, it was but natural to me all through my professional life as a physician to be rather conservative, to adhere to what I had learned during the time of my training as student and assistant physician. There is wonderful, rapid progress in the science and practice of medicine and I have endeavored to keep in line by reading good periodicals, by listening to good papers, by traveling and visiting the clinics and lectures of leading men. But I have always considered it a lack of fundamental medical education to rush to every new fad in medicine, to take up everything new that was placed before us as *the* thing, only to be dropped in a short time as worthless.

Kindly judge me according to these "confessions," if in the following narrative I might appear to have become somewhat extravagant in my views.

I cannot resist to be quite enthusiastic from what I saw and I make the following general statement: We are entering in a new era in curing neoplasms of every kind; regarding cancers and tumors we are now in the same position as we were about forty years ago in combating wound-infection. Before the Lister era, the ravages of wound-infection after operations and injuries were appalling. Lister initiated the battle against nosocomial gangrene, erysipelas, sepsis, pyemia, so common in the pre-Lister days. Lister was ignored, antagonized at first, but on his initial fundamental work has been built the great structure of present day asepsis, that has rendered wound-infection a thing of the past, unknown to the younger generation and that has made possible the development of modern surgery.

There is no doubt in my mind but that the steady development (with the usual, unavoidable setbacks) of Roentgen-rays and the rays of the radio-active substances will eventually lead to a sure, painless and harmless cure of all sorts of neoplasms, benign and malignant; there are even prospects of the cure of infectious diseases also (tuberculosis, sepsis) through the agency of these rays.

My observations and my interests are entirely

centered in and restricted to the application of Roentgen-rays and of Mesothorium to diseases peculiar to women.

I shall first speak about Roentgen-rays in gynecologic practice. For diagnostic purposes, X-rays were never applied to any great extent, neither in obstetrics nor in diseases of women; attempts to facilitate the diagnosis of pregnancy in utero, of extrauterine pregnancy, of pelvic deformities and of other conditions were made, but not with great success until quite lately.

The first application of Roentgen-rays for therapeutic purposes in gynecology was made by a German physician, shortly after an American, then a French physician used the X-rays to the same end, but it was Prof. Albers-Schönberg in Hamburg, who worked out a method of application in gynecology; he used it in many women with uniform good results. Others took up his method, but for one reason or another not all were satisfied with this method; modifications were tried; the greatest advance was made at the Frauenklinik of Freiburg under Prof. Krönig by his assistant, Dr. Gauss. Through many painstaking and time-absorbing biologic experimentations on animal and plant life and through many experiments in physic and therapy, a technic has been developed by these gentlemen, through which it is possible to obtain the desired end in a short time with absolute safety and certainty.

The whole of the so-called *Freiburger methode* is expressed in one of these long German words: *Filternahkreuzfeuerbestrahlung,* or if you like another one, *mehrstellige Filternahbestrahlung,* which mean: the application of the Roentgen-rays is done through a certain filter at a short distance and in such a way, that the rays entering the body from different fields reach the deep-seated organs crosswise, crossfire like.

To obtain these results, the Freiburg workers were obliged to change thoroughly the apparatus and appliances heretofore used in Roentgen work. With the assistance of expert technicians in the construction of Roentgen-apparatus, they succeeded in establishing a standard of most effective and workable Roentgen-apparatus and auxiliaries. The changes affect the Roentgen-tubes, the inductor, the interrupter, the filter, etc., etc.

It is impossible for me in this short essay to enter into details, which are many and varied. The object of all experimentations was to obtain in as short a time as possible the largest amount of hard, penetrating rays with exclusion of the useless, harmful, soft rays. The end of experimentation is not on hand by any means, further improvements are desired and sought.

When the gentlemen from Freiburg first published their method, the gynecologic world was shocked, terrible disasters were predicted, objections raised on purely theoretical reasons—but, as usual, one by one, the workers are adopting the Freiburg method; the disasters do not materialize and Roentgen therapy has become a well-founded, well-established method of treatment of different affections peculiar to women.

Roentgen-rays have already revolutionized the treatment of fibro-myoma uteri. The question is not any longer (as in the beginning of the use of X-rays on myoma uteri), which cases should be selected for X-ray treatment, but the question is now: which cases should be selected for operation? This means, that the routine-treatment of women with fibro-myoma uteri is not an operation any more, but the application of Roentgen-rays instead, and in a number of clinics (Heidelberg, Freiburg, München), which I visited, this indication is strictly carried out. Certain cases are not considered proper objects for X-ray treatment, such as very large tumors, rapidly growing tumors, pedunculated submucous fibroids and others; especially where the desirability of pregnancy is an object, here, as before, operations are performed. The action of Roentgen-rays in these cases is twofold: in the first place, the ovaries are affected. Experimental research on animals and examination of ovaries of women who had been treated with Roentgen-rays and later operated, show the ovaries in the state of "senile atrophy." In the second place, the fibro-myomata are directly affected; they either disappear entirely or are reduced in size to different degrees.

Objection to the use of X-rays for fibro-myoma uteri has been made on the ground that an error of diagnosis may occur, that a fibro-sarcoma may be taken for a fibro-myoma, or that a co-existing cancer may be overlooked. Aside from the great rarity of these sarcomatous tumors or that coincidence, it must be stated, that careful observation will in every case very soon disclose the true nature of the growth; it might be added to this that Roentgen-rays may yet be found directly curative for sarcoma and carcinoma.

The advantages of X-ray treatment of fibro-myoma uteri as compared with an operation are manifest.

There is absolutely no mortality from the treatment. The same cannot be said of surgical work; if an operator selects his cases carefully, he may well be able to perform 50 to 100 hysterectomies without a death, but this does not represent the true status of mortality after operation for fibro-myoma uteri. If all operated cases were published, I have no doubt, a mortality of at least 5% would be found.

When treated with Roentgen-rays, the woman does not need to enter a hospital, all she has to do is to go to her physician at certain times, be treated and return to her usual life and duties. No dread and anxiety before an operation; no pain, thirst or inconvenience, nor ill-effects (thrombo phlebitis, adhesions, ventralhernia) after an operation.

Next to fibro-myoma uteri it is the so-called metropathia hemorrhagica, where Roentgen-rays have been applied most successfully. We understand with this term hemorrhages from the uterus, where no pathologic changes are present in the uterus; the bleeding is caused by changes in the ovary, most probably under the influence of changing innersecretion of the ovary, especially when

this organ is nearing the final stage of its physiologic functions. These anticlimacteric hemorrhages at times assume an alarming character, at the same time they are difficult to control, curetting will be only of short benefit; frequently resort is had to hysterectomy. Aside from these anticlimacteric hemorrhages, irregular floodings will occasionally persist for years, to the greatest annoyance and uneasiness of women, entering the climacterium. In all these cases Roentgen-rays act truly: cito, certe et jucunde. The existence of a cancer will certainly not be overlooked by a careful physician in any of these cases; I just mention this, because theoretic objections have been raised on this point.

Roentgen-rays are furthermore used with great benefit in tuberculous affections of the female genital organs and of the peritoneum.

I have besides seen at München two charts of puerperal fever cases; temperature 104, pulse 120-130; all the symptoms of typical puerperal sepsis, in both cases an application of X-rays had been made, as for myoma uteri; temperature and pulse dropped to normal, the women recovered rapidly. I just mention these two cases, without laying great stress on them.

There are other indications for the use of X-rays in gynecology; but there is diversity of opinion as yet, so I shall not discuss these affections. No difference of opinion exists any more as far as the safe and sure curability of metropathia hemorrhagica, fibro-myoma uteri and certain forms of tuberculous peritonitis is concerned.

The question may here be asked: who should apply Roentgen-rays in gynecologic therapy? For the diagnostic use of Roentgen-rays, non-medical persons may not be objectionable; but when it comes to apply these rays as a curative agent, in my opinion, physicians only must do this work. The reasons are manifold; the fact must not be overlooked that only to members of the medical profession is accorded the protection of the law, as expressed in the phrase "employing ordinary care and skill of the profession."

A most careful constant supervision of the woman treated with Roentgen-rays has to be done, to get results and to avoid disappointments and failures. This, in my opinion, is best accomplished by a physician who is thoroughly competent in gynecologic examination and familiar with the special technic of Roentgen deep therapy.

I shall now narrate my personal experiences with Mesothorium as I saw its application and results.

At the Heidelberg Frauenklinik, I saw two women treated.

1. Case History: Woman about 50 years old; the case had been considered "inoperable" by Prof. Menge; large cauliflower growth on cervix; parametria involved; outspoken cachexia, foul discharge. Three applications of Mesothorium, 60 m., had been made; the Mesothorium was placed in the vagina or directly in the cervix, left for 24 hours, while patient was in bed; application repeated in 14 days to three weeks. When the woman was demonstrated to me by Dr. Eymer, head of the rays laboratory of the Frauenklinik, the cervix appeared healthy, normal, small, uterus small, not freely movable; no more discharge; woman relieved of all symptoms; treatment was still continued; Mesothorium placed inside the cervix.

2. Carcinoma corporis uteri with foul discharge and cachexia: Treatment intracervical; three treatments; all symptoms had disappeared; treatment continued.

At Freiburg, owing to the absence of Prof. Kroenig and of Dr. Gauss, who were both in America, I did not see any patients, only the instrumentarium was shown.

At München, through the kindness of Prof. Doederlein, I was enabled to see a few women, about ready to be discharged as "cured" after Mesothorium application.

1. A woman, whose case had been considered "inoperable," almost incurable, by Prof. Doederlein; large cauliflower tumor on cervix, etc. Several treatments. When I saw her, cervix appeared normal to the eye; relief of all symptoms.

2. Relapse after abdominal operation: in vagina a bluish, readily bleeding tumor had appeared of the size of a marble; when I saw her I found a whitish shining, scarlike, flat infiltration, not bleeding; several applications of Mesothorium had been made.

Both these women were still under treatment, not with Mesothorium, but with Roentgen-rays, owing to the scarcity of Mesothorium.

3. Relapse in pelvis after abdominal operation: When I examined her, vagina appeared normally contracted, scarry; no infiltration in pelvis found.

4. Rather young woman; abdominal operation: Relapse with infiltration in pelvis; when I examined her, vagina funnel-shaped, no signs of infiltration.

5. Considered an inoperable case, bladder and rectum had been affected. When I examined her, apparently cured; vaginal portion and uterus feels like an atrophied, senile uterus.

All the women appeared healthy, had gained in weight and were relieved of their distressing symptoms.

Prof. Doederlein told me in November, 1913 (and gave me permission to repeat his statements), that he had not performed any operation for cancer of the uterus since March, 1913, with one exception; that he had discharged the women, treated with Mesothorium, apparently cured. He divided his cases in three classes:

1. *Uncurable cases*—where the cancerous affection has become general or invaded neighboring organs; nothing on earth could save these women, neither operation nor Mesothorium; these women died.

2. *Operable cases*—These had apparently been cured by the application of Mesothorium, all manifestations of the disease had disappeared.

3. *Inoperable cases*—Here the application of Mesothorium first rendered cases "operable," then continued application had apparently effected cure.

Prof. Doederlein said that this was his present experience; that certainly nobody could as yet have any definite opinion; whether he would still be so enthusiastic in five years, that he could not know.

Needless to say, that wherever in these clinics the diagnosis of cancer had been made, the diagnosis has been verified by the microscope.

After München, I visited Berlin; at the Frauenklinik, Prof. Bumm's place, I saw Dr. Warnekros, head of the rays department. I was informed that Prof. Bumm had given up the use of Mesothorium altogether! they were using Roentgen-rays on uterine cancer; applications were made on the abdomen and directly on the cervix through lead-glass spec-

ula; the latter application was made continuously for one-half to one hour for days.

Mesothorium had been discarded, because severe injury to the bowels had been recorded after its use; several women had returned with strictures of the intestines. Prof. Bumm was to read a paper on his experiences with Mesothorium early in December. At the Charité Frauenklinik, apparently not much is done in ray-therapy; they have no Mesothorium and they use Roentgen-rays in a mild fashion.

In Hamburg I saw Prof. Albert Schönberg at work in his laboratory, employing the tubes for diagnosis, surface treatment and deep therapy. He is at the head of the Roentgen department of the municipal St. George Hospital with over 2000 beds.

If I review what I saw and heard about the application of Mesothorium and Roentgen-rays for the use of neoplasms, I believe that I am justified to maintain the opinion, that it is only a question of time and a safe and certain cure of these affections will be brought about by these rays.

Certainly this matter is in its incipiency as yet; many experimentations have to be made, in order to find out the proper dose, the best method of application, time of exposure, protection against injury, filters, etc.

No doubt can exist about the power of the radio-active rays (including Roentgen-rays) to destroy living animal tissue, especially of the young, growing, proliferating kind and of the possibility, fully demonstrated already, to confine the activity of the rays to this growing, proliferating, neoplastic tissue, leaving a healthy scar instead.

I can see then, dawning before us, a time when women suffering from cancer of the womb (and of cancer of other organs) will be cured, permanently cured.

That much cannot possibly be said of our present day operative therapy of carcinoma uteri. If we look at the present state of cure of carcinoma uteri by means of operation without fear and prejudice, we are forced to admit that results obtained through operations are pitifully inadequate to our endeavors.

In the first place, many women die in direct consequence of operative interference for cancer of the womb, many more than some exceptionally good statistics of expert operators will show; the large number of deaths after hysterectomy for cancer through the length and breadth of this country is never made public.

Those who survive remain invalids in many instances, suffering from injuries to the digestive tract (fecal fistula) or from injury to the uropoetic system (urinary fistula, inflammation of bladder, pyelo-nephritis, etc.) and of other evil consequences.

But, worst of all, in almost all the cases, no matter how extensively operated, a relapse of the carcinoma occurs, sometimes as late as five to seven years after the operation. This fact is not altered a bit through statistics carefully worked out, by eliminating this case and that and arriving at the conclusion, that a permanent cure after operation is attained in 10 to 15 per cent. of all operated.

Personal experience, extending over many years, is to me of greater value than all the juggling statistics.

Engaged for more than 25 years in extensive practice in the same place, I have been enabled to see, operate and follow up a large number of women suffering from cancer of the uterus; quite a few were operated by myself, others by operators in San Francisco and California, in the East and in Europe.

I must say that in all these years I have knowledge of only one woman who was permanently cured; I had seen her many years ago; an incipient carcinoma cervicis was diagnosed; diagnosis verified through the microscope by Dr. D. W. Montgomery; she was operated by the late Dr. Clinton Cushing with vaginal hysterectomy, and was living until a few years ago, when she died from *emphysema pulmonum* and heart affection.

I have long since come to the conclusion that the only chance for permanent cure of cancer of the uterus lies in early diagnosis and early operation. Cancer is, at first, a local affection and can be eradicated; if the disease has once spread to the lymph-system, then it is impossible, even with the most searching operation, to reach all the advancing, proliferating cells, since no sign exists to know how far the invasion has gone.

That, unfortunately, we see incipient carcinoma uteri seldom, is in my opinion due to the fact that women with carcinoma uteri defer to see a physician, because they are afraid of the operation, afraid of the suffering after the operation; they know that many die from the operation, that others have been miserable since the operation, and that after all, death from the dreaded disease was not prevented through the operation.

If the knowledge is once spread that cancer of the womb can be cured without an operation, without any suffering, women will see a physician when they notice the slightest irregularity or change in their genital sphere, especially at the critical age. If the physician in charge does his duty and examines carefully, then at last the time will be on hand, that an early diagnosis of cancer of the uterus, as long as it is a local affection, will be made and proper treatment will affect a permanent cure. Cases of advanced, uncurable carcinoma uteri will become—if not altogether a thing of the past—at least a great rarity.

In this total absence of all fear of treatment, the consequent ready access to medical aid with the possibility of early diagnosis—in these things lies, in my opinion, next to the possibility of actual cure, the great, wonderful benefit that is to be derived for womankind through the steady, scientific development of Roentgen-rays—and radio-active rays-therapy.

To sum up, in conclusion, I wish to say: The application of Roentgen-rays in gynecologic therapy for the successful treatment of fibro-myoma uteri, metropathia hemorrhagica, tuberculosis and other affections is well established.

The successful application of the rays of Mesothorium in gynecology for the cure of neoplasms, benign and malignant, likewise the employment of Roentgen-rays for the cure of malignant growths

in gynecologic work, is as yet not fully established; mode of application, dose, scope of usefulness, final results and many other things, have as yet to be found and settled through various researches and experimentations and careful observations of the sick.

To draw conclusions for the practice, it may well be said that a physician can conscientiously employ Roentgen-rays in certain diseases peculiar to women; a physician who attempts the use of Mesothorium in gynecologic practice must be fully aware that he walks on unsettled, uncertain ground. Operations for cancer of the womb, of the breast, etc., must not as yet be discarded; employment of Roentgen-rays after operations for cancer is highly recommended as a preventive against relapse.

PERSISTENT CONJUNCTIVAL HYPERAEMIA AFTER CATARACT EXTRACTION AND ITS CAUSE—REPORT OF SIX CASES ILLUSTRATING THIS CONDITION.*

By P. de OBARRIO, M. D., San Francisco.

In the course of some detailed observations in two series of fifty cataract extractions each, my attention has been called to the fact of a certain hyperemic state of the conjunctiva. It has been of rather frequent occurrence to observe a slight irritation after extractions, but of no serious nature. This congestion of the conjunctiva is of the nature you are apt to find in healing wounds and in all cases it has subsided after the routine treatment of local applications either of heat or cold, according to the time expired after the operation. I lay stress on this matter, for it is my object to call the attention to the fact that it is not to this physiological reaction, so to speak, that I am to refer, but to some persistent vaso-dilator disturbance of obstinate character appearing immediately after the surgical interference and existing for a more or less indefinite period. This symptom may or may not be accompanied with pain, but as a rule there is no pain whatever.

The general course of such a case, as I will immediately relate, will, I think, demonstrate better my point.

A patient calls on you with a lenticular opacity of an advanced character justifying a surgical interference. The functional examination proves favorable, that is to say, the motility, tension, conjunctival and lachrymal apparatus, iris reaction, light perception, projection, etc., are found to be normal. There is no previous history of traumatism or otherwise which may lead to the supposition of deep-seated trouble, which may have been overlooked; in other words, we are dealing with a simple, mature, senile cataract of normal character, demanding interference and such interference granted.

You proceed in the usual accepted manner of extraction, there is nothing abnormal during the operation, and you are led to foretell a satisfactory result. There being no indication to disturb the patient, you do not interfere with the bandage till the third day, say, when you remove it. On examination you are immediately struck with the fact that there is a marked hyperemia of the conjunctiva of an alarming nature. You naturally examine immediately the corneal wound, as you are led to believe that such a conjunctival reaction would be co-existant with a corneal infection. You are nevertheless pleasantly disappointed on finding there is no such condition. The corneal wound is normal, there is no iritic hernia nor entanglement of same in the corneal wound, the anterior chamber is formed, the pupil is central, black and circular, the sight good, no secretion. Taking all these data into consideration, you prescribe, say, the more or less continuous application of cold compresses of the solution of boric acid, this to be continued for 24 or 48 hours, but you notice no beneficial effect whatever. You then make use of heat, either in the dry form or by means of moist antiseptic solution of a mild character, such as the boric acid already mentioned. To this you give a fair trial during 48 to 72 hours or more, but you are again disappointed, for there is no betterment justifying its continuation. To make my story short, you make use of all other means in current practice and generally accepted in cases of localized congestions, but to no avail. There is then but one point to be taken into consideration, and that is as to the existence of some pathological condition elsewhere that, by reflex action, might influence in an indirect manner the vasomotor center of the conjunctival vessels, causing these marked hyperemic conditions.

You would probably start by draining the intestinal canal freely with a saline purgative, that is, if you have not done so from the very start, which I consider a good practice, and you would maintain it working with regularity. This, however, proves unsatisfactory. You make then a careful examination as to the existence of an undetected pathological condition in the ear or the nose or throat, or the larynx, or the cranial cavities, or the teeth, and you are impressed that none of these are in any way affected to justify such state of affairs, with perhaps the exception of the teeth. You find that there are one or several of them carious, that the first or second bicuspid are frequently so, that probably there is nothing left of them but the roots, that the gums in their immediate vicinity are slightly inflamed, that there is some pus secretion on pressure, that such roots have laid in place for a long time, that there is probably a small abscess at the apex—in a word, a pathological condition of an irritative character that might well explain the aforesaid hyperemic state of the ocular conjunctiva. You propose the extraction of these teeth, which is eagerly accepted by the patient, and in 48 to 72 hours all symptoms disappear, the cornea heals in a normal way and there is no ill-effect to complain of leaving a healthy aphakic eye.

A brief report of my cases will illustrate these points. Mrs. L. C. H., 65 years of age, consults me as to her rapidly failing sight of the right eye. On examination I find a senile cataract in a mature condition. The functional examination proves normal, and I propose the extraction. The operation offers nothing noteworthy. The patient suffers

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

quite a nervous shock and the evening of the same day she has nausea and vomiting, which however subsided immediately. Next day the bandage was removed and the eye was found to be doing well. The anterior chamber was formed, the iris and pupil were normal, there was slight reaction of the conjunctiva. The bandage was replaced, and there being no indication, it was not removed till the fifth day. It was found then that there was no secretion, no pain, no photophobia, no synechia, but a very marked hyperemia of the whole conjunctival surface. The application of cold compresses was immediately begun and kept for five days, particular attention being paid to the functions of the intestines, prescribing as well a light diet. At the end of the fifth day, or ten days after the operation, there was no improvement whatever. The patient did not complain, her vision was fairly good, she slept well, and digested well, but there was this very marked homogeneous dull red congestion of the conjunctiva. I directed the application of hot fomentations that were continued again for five days, but there was no improvement. It was at this period that I made a thorough examination as before explained, and decided to have extracted two portions of carious teeth, the first and second bicuspids of the right side. In 24 hours there was a marked change for the better, and in three days all was well.

The second case is that of a man, R. C., 57 years of age, laborer by occupation, in good state of health. He had cataracts in both eyes. The left one being in better condition to be operated, I proposed to do so. The operation went on without any abnormal incident, and everything pointed to a rapid and normal recovery. The patient complaining of some pain, I removed the bandage after 24 hours. There was some congestion of the conjunctival vessels, which became more marked in the succeeding days. The routine treatment was instituted, but to no effect. The eighth day after the operation, I proceeded to examine the teeth and found the second bicuspid and first molar of the left superior maxilla in very bad condition. The extraction of these took place the next day and on the fifteenth day after the operation I discharged the patient cured with 15/20 of vision and able to read with plus 13 diopters.

The third case is that of Mrs. C. T., a woman of the middle class in good health. Her left eye had been enucleated about 10 years previous and as far as I could learn it was a painful atrophic eye as a consequence of an iridocyclitis of a severe character. Her right eye had suffered from plastic iritis as could be detected by a complete posterior adherence of the iris to the lens. There was a false membrane covering the entire pupillary area. With all this, the tension was good, the light perception and light projection were normal. Being her only eye, she was very anxious about the result of the operation, which I naturally prognosticated with some reserve. She took all chances and was willing to be operated. I proceeded as follows: After the corneal incision I performed a large superior iridectomy. I then found that the false membrane extended to half way between the pupillary border and the base of the iris, parallel with the latter, as if a circular piece of membrane had been inserted between the iris and lens, adherent principally to the iris. With the point of the cystotome I hooked the membrane from behind and with gentle traction I succeeded in extricating it in its entirety. As there were some portions of the iris adherent to the lens, I extracted the lens with the loop. The reaction was rather violent with a good deal of conjunctival chemosis, but very little pain. The chemosis subsided after a few days. The patient suffered then from periodical nocturnal orbital and ocular pains which subsided after the use of a saline purgative and the sulphate of quinine in 20-grain doses. The patient entered then in the period of marked hyperemia of the conjunctiva that characterized the previous cases, and with no tendency to recover. The second bicuspid and first molar of the right superior maxilla were found to have been carious a long period and at times painful with some swelling of that side of the face. After their extraction the patient had a non-interrupted cure.

The fourth case is that of P. L., a merchant, 63 years old. His right eye had been operated for cataract two years previous when he consulted me as to the condition of his left eye, which had a healthy non-complicated senile cataract with normal functions. There was no incident either during or after the extraction, but on the third day I noticed that dull red congested conjunctiva with no other symptom, which brought to my mind the previous cases that had been observed in my practice at long intervals. There was, as in the previous cases, an old carious tooth and a root of the first and second bicuspids of the left superior maxilla. Questioning the patient as to the behavior of his right eye when operated, he told me that it had healed with no accident whatever. All the teeth in the right upper maxilla were normal; this seemed to me a very instructive case, as it conclusively proved that the teeth must be affected on the side in which the operation is performed, so as to have effect. This was undoubtedly the case with my other patients. After the extraction of the bad teeth, the patient recovered with very good results.

The last two cases are hospital cases which offer great similarity in their behavior.

N. H., 24 years, laborer, had received a punctured wound of the right cornea while riding at night in the woods some two years previous. He noticed his sight began to fail him since then. He presented a traumatic cataract of slow evolution with a filliform anterior synechia. The functional examination being normal, the extraction was performed without iridectomy. There being no indication to the contrary, the bandage was not removed till the third day. At once I noticed that dull uniform redness of the whole bulbar conjunctiva without any marked secretion, no pain, a healthy wound and a perfectly transparent cornea, over a normally formed anterior chamber.

This patient was in my general surgical ward at Saint Thomas Hospital in Panama and received all necessary attention principally as I was particularly interested on account of the fact of his bringing to my mind the previous cases of conjunctival hyperaemia which he resembled so closely. The patient did not have any discomfort but his condition did not improve in spite of every kind of treatment. On the 16th day after operation, I personally extracted two old snags of the right upper jaw which apparently were not giving him any trouble, and to my satisfaction his eye cleared up in two more days.

The last case is that of N. P., a farmer, employed at one of the canal dredges. He was 65 years old and presented bilateral simple senile cataracts that offered nothing particular and for which I operated him at the hospital.

His left eye, which was operated first, presented the typical conjunctival reaction which I have discussed in the previous cases. The teeth of the right upper jaw were at fault and after extraction all symptoms subsided. His right eye when operated later, gave no reaction such as he had in his left eye.

I may say that these cases are not very frequent, but that they are nevertheless encountered in practice in the tropical countries, and one must be prepared to meet emergencies, being never backward in clearing the field by doing away with the exciting cause.

I am led to conclude then:

1st. That in all persistent hyperemic conditions of the conjunctiva after cataract extraction with no other apparent symptom, the teeth may be the exciting cause that acting through the gyserian ganglion bring about the aforesaid result.

2nd. That as experience has taught me, the treatment of this condition is the extraction of the decayed teeth or imbedded roots.

I therefore recommend this practice in all protracted vaso-dilator disturbances after surgical interference in non-infected eyes, as a logical procedure worthy of being taken into consideration and backed with the experience of these few but well defined cases.

NOTE ON THE SATURATION-POINT OF SERUM FOR NORMAL LIPOIDS AND CHOLESTERIN.

By CLARENCE QUINAN, M. D., San Francisco.

MATERIALS.

Serum. A quantity of fresh blood was procured from one of the large packing-houses near San Francisco. Prime beef cattle were the source of supply. The blood was caught as it came from the throat incision in clean, dry glass jars. The stoppered, full receptacles at once were carried into the great refrigerator of the establishment, and after remaining there about 36 hours, the clear serum was aspirated into other containers. It was not considered necessary for the purposes of these experiments to collect the serum with full antiseptic precautions. The problem was rather to avoid contamination from unclean surfaces; in a word, to keep the specimens chemically clean. It seemed improbable that, in the brief experiment period, bacteria would multiply to a number sufficient to affect in a material degree the end results in tests of solubility, and, as a matter of fact, this element of error must have been very small indeed, for the control serum after 24 hours in the thermostat remained brilliant-clear, and to the naked eye presented nothing to indicate the presence of any considerable number of organisms. Bacteria were present, no doubt, but as yet probably had produced no extensive chemical changes.

Normal Lipoids. About one quart of fresh serum was mixed with five times its volume of absolute alcohol and the mixture was set aside for several days. The precipitated protein was then thrown upon a filter, and the yellowish, alcoholic filtrate was concentrated on the water-bath until of a sticky consistency. The relatively water-free residue was extracted with excess of absolute alcohol, the mixture was filtered free from inorganic salts, etc., again evaporated on the water-bath, and the residue then dried thoroughly at 100 Centigrade. The alcoholic extract of the serum obtained in the manner just described, was now thoroughly exhausted with absolute ether (distilled over metallic sodium), and the ether, finally, was distilled off, leaving behind a yellow, oily-looking mass of mixed lipoids. This substance was kept in a dessicator over solid calcium chloride until needed.

The fresh serum of healthy beef-cattle contains as a rule about 0.6% of fatty bodies which may conveniently be spoken of as lipoids. In a series of animals the amount varies but little. The mixed fats yield cholesterin upon saponification with alcoholic potash, and when the mass is oxidized with a mixture of sulphuric and nitric acids it gives a moderate reaction for phosphoric acid though, obviously, only a small amount of lecithin could thus be accounted for. The reaction of the mass is neutral.

Cholesterin. Pure cholesterin was prepared from human gallstones in the usual manner and the crystals were purified by recrystallization from absolute alcohol.

METHOD.

The plan followed in this investigation was to add a weighed excess of normal lipoids or pure cholesterin to equal volumes of normal serum and serum previously modified in various ways by the addition of reagents, and then to determine, after a period of 24 hours in the thermostat, what portion of the lipoids, if any, had gone into solution. It was desired, especially, to alter the calcium relations of the serum, which, of course, could be effected without much chemical disturbance, and also to modify in a rather gross way the quality of the reaction, with a view to observe to what extent electrolytes play a part in the solution of the serum fats. The point upon which the greatest stress was placed, however, was that of the maximum solubility of normal lipoids and cholesterin in pure, unmodified serum. Accurate estimations of the ether-soluble elements, obviously, were indispensable. In work of this character the lipoid value of the normal serum remained, throughout, a constant, and was included in each extraction result; any increment of ether-soluble matter, therefore, could fairly be ascribed to the lipoid enrichment.

Two series of tests were prepared each of which consisted of six flasks. One of these served for the cholesterin tests, the other for those with normal lipoids. It will suffice to describe one such series in detail. The flasks were arranged as follows: 1. 25cc of normal serum, untreated, as control: 2. 25cc of normal serum. 3. 25cc of normal serum decalcified by the addition of .015 g. of ammonium oxalate in powder. (This is more than twice the theoretical amount of the ammonium salt required to precipitate the calcium, since, in a large number of gravimetric determinations of calcium as CaO in the ash of this serum the amount was practically constant at 0.0134 g. of CaO per 100 parts of serum). 4. 25cc of normal serum to which .030 g. calcium chloride was added. 5. 25cc of normal serum to which .5cc of n/2 hydrochloric acid was added, and, 6, 25cc of normal serum rendered hyperalkaline by the addition of 0.125 g. of sodium carbonate in substance. Each flask, depending upon the series, and with the exception of the control, received either 0.1 g. of cholesterin or an equal amount of normal lipoids. The sealed flasks remained for 24 hours in the thermostat. All were treated alike thereafter. The contents of all were passed at once through unglazed porcelain candles and

the resultant clear filtrates were used exclusively in all determinations of lipoids.

In the quantitative study of the fatty substances held in protein matter, protracted extractions in a Soxhlet or other similar apparatus are always necessary if one is to satisfy the most exacting analytical requirements, and the outlay of time unavoidably entailed where an extended series of such extractions must be carried out is of course very great. However, all but a small quantity of the lipoids are taken up by the alcohol or acetone employed in the preliminary precipitation, and for work in which fairly exact quantitative results are desired and in which extreme accuracy is not essential, Soxhlet extractions may be dispensed with and reliance placed upon the thorough use of absolute alcohol, acetone and ether by direct extraction. The latter method therefore was employed in the present study. Naturally, the conditions of experiment as far as possible were carefully controlled, and the extractions were done in duplicate.

Five cubic centimeter portions of the clear, Berkfeld filtrates were pipetted into flasks each of which contained 50 cubic centimeters of pure acetone and the flasks were allowed to stand for one week. The precipitated protein was then brought upon a filter, allowed to drain, rinsed with 20 cubic centimeters of acetone, and again allowed to drain. The protein mass was then thoroughly mixed with 25cc of absolute alcohol, and after this had passed through the filter, 20 cubic centimeters of ordinary pure ether were used to rinse down the filter and contents. This was the exact procedure in each instance. The solvents were distilled off on the water-bath, and the residue was dried to constant weight on it. The anhydrous residue was then exhausted with 75 cubic centimeters of absolute ether, this in turn was distilled off, and the lipoid residue finally obtained was dried to constant weight at 100° C. The values obtained are shown in tables I and II.

The unmistakable conclusion to be drawn from Table I is that cholesterin is nearly insoluble in normal serum. This interesting and important fact might have been safely predicted, *a priori*,—were it safe here to reason by analogy, from the chemical relations of cholesterin and its known insolubility in water. But then blood serum is by no means an ordinary aqueous solvent. There is oily matter dissolved in it, and oils are excellent solvents of many organic substances; ferments of one sort or another are present; esterification might be thought of and, perhaps, some allowance made for vitalism with its infinite possibilities. Had all the cholesterin been dissolved by the serum, in the five cubic centimeters of that fluid taken for the extraction twenty milligrams should have been recovered. The attempt to recover cholesterin from normal serum failed. The normal lipoid value remained unchanged. In one or two of the test mixtures, however, it will be seen that small gains over the normal were noted. But these tests represented modifications of reaction or mineral content such as would be unlikely to occur in fact, and it is very probable that the single high value noted in the hypoalkaline specimen falls within the limits of error inherent in the extraction method, and for that reason may be disregarded.

TABLE I.

Solubility of Pure Cholesterin in Serum. Duplicate analyses. 5cc of serum taken for each extraction. Figures show total extract soluble in absolute ether.

	Total ether extract 5 cc (a)	Total ether extract 5 cc (b)	Mean	Cholesterin found
Normal serum (control)	0.0291	0.0274	0.0282	
Normal serum and chol.	0.0290		0.0290	0.0008
Decalcif. serum and chol.	0.0300	0.0281	0.0290	0.0008
Hypercal. serum and chol.	0.0228	0.0150	0.0189	0.0093
Na_2CO_3 serum and chol.	0.0295	0.0302	0.0298	0.0016
HCl. 5 cc n/2 serum and chol. ..	0.0310	0.0332	0.0321	0.0039

TABLE II.

Solubility of Normal Lipoids in Serum. Duplicate analyses. 5cc of serum taken for each extraction. Figures show total extract soluble in absolute ether.

	Total ether extract 5 cc (a)	Total ether extract 5 cc (b)	Mean	Normal lipoids found
Normal serum (control)	0.0291	0.0274	0.0282	
Normal serum and lipoids.....	0.0317	0.0334	0.0325	0.0043
Decalcif. serum and lipoids.....	0.0335	0.0329	0.0332	0.0050
Hypercal. serum and lipoids.....	0.0352	0.0301	0.0326	0.0044
Na_2CO_3 serum and lipoids.....	0.0358	0.0339	0.0348	0.0066
HCl. 5 cc n/2 serum and lipoids	0.0321	0.0326	0.0323	0.0041

Somewhat more positive results were obtained in the tests of normal lipoids, although, considering the origin of the experiment material, it would have been reasonable to anticipate larger values. Approximately twenty per cent. of the lipoids added to the serum as enrichment were found in solution. And the rate of gain, as may be seen in Table II, was pretty uniform throughout the series. But, since the lipoids used in the experiments were native constituents of the test serum, and hence were ideally adapted for the purposes of a saturation test, it follows that the value noted, *i. e.*, 0.0325 g., or 65%, represents, actually, the maximum solution number of a normal serum for its own proper lipoids. The mean value for this serum was 0.56%. Comparing values, therefore, it is evident that, in twenty-four hours the serum added almost exactly one-tenth of one per cent. to its lipoid content.

Conclusions:—

1. Pure cholesterin is very slightly if at all soluble in fresh bullock's serum.

2. Esterification of cholesterin does not occur to an appreciable extent in fresh bullock's serum *in vitro*.

3. The saturation-point of a serum for its own proper lipoids is only 0.1% in excess of the normal content.

REPORT OF A CASE OF SYSTEMIC BLASTOMYCOSIS.*

By HAROLD P. HILL, M. D., and E. C. DICKSON, M. D., San Francisco.

A certain amount of interest is attached to this case in so much as previously no case of systemic blastomycosis has been reported in California. We have had a number of infections with a type of fungus closely related but which differs in several characteristics from the blastomycosis and which with the exception of one case reported from Buenos Aires by Werincke seems peculiar to California. In 1894, Gilchrist described the first case of blastomycetic dermatitis and in 1902 it was recognized that the infection became generalized or systemic. Since Walker and Montgomery's report of that year, reports of systemic infection with blastomycetes have been frequently made, the large majority of these cases occurring in or around Chicago. The type occurring in California was first reported in 1894 by Dr. E. Rixford and a full report of cases occurring to 1905 was given by Dr. Ophüls, who suggested the name oidium coccidioides for the organism. The clinical course of systemic blastomycosis and coccidiodidal granuloma has a close similarity. The chief differences between the two types of infection consist in the mode of multiplication of the organisms and their channels of distribution. The blastomycetes multiply by budding; the oidio coccidioides by endo sporulation. The former is distributed mainly by the blood, the latter by the lymph channels. It is not necessary to describe these organisms, their cultural characteristics or speculate as to their relationship. It is interesting to note that the case here described developed in California where previously only coccidioidal granuloma had been found and was an infection with blastomycetes.

CLINICAL HISTORY.

Angello Spilloto was admitted to the Stanford wards of the San Francisco County Hospital, July 6, 1912; a native of Greece, twenty-eight years old, of good family history, day laborer, working in McCloud in the summer and Sacramento Valley in winter. He worked on the railroad for a time. No history of previous complaints. Six months ago, while working for a cement company at Davenport, California, patient caught cold and spit up blood. This lasted for two months. Three months ago he noticed a swelling under the left lower eyelid, four days later a second swelling appeared under the alae nasi. A few days later, a third swelling came on the left alae nasi, then a fourth on the outer condyle of the femur. These were followed at intervals by swellings on forehead, legs and arms. At various intervals the swellings on the face broke down, discharged pus and dried up. He has lost weight and has not worked for some months; no loss of appetite, but gradual loss of strength. At one time he entered a hospital and had the abscesses incised.

The patient was emaciated, pigmented and covered with nodular masses, discharging ulcers and dried crusts. He had a slight cough, raised a muco-purulent sputum, at times streaked with blood. Percussion of the thorax gave impaired resonance over the whole chest anteriorly except for an area in the right side at the level of the second and third ribs; right side posteriorly was flat to the spine of the scapula except for a dull tympanetic area at the inferior angle of the scapula. Left side posteriorly, impaired note over entire side. There was bronchial breathing at right apex and right base with amphoric quality at the inferior angle of scapula. Occasional moist rales scattered throughout. Nothing found in the abdomen—splenic dullness increased but spleen not felt; a few shotty cervical lymph glands. Temperature 101°, pulse 108, respiration 24.

There were fluctuating masses in the following regions: One, upper part sterno mastoid; three confluent in left temporal region, one junction clavicle and sternum; two on the anterior surface of left elbow, one lower third of left forearm, one region of the external malleolus left foot.

Ulcers were present on the right elbow, with protruding granulations; middle of right arm; right thumb, left elbow; external surface middle of right thigh and external surface of right knee and lower third of left leg.

Scars of healed ulcers were present under right eye, chin, lower lip, nose, right leg and foot.

The skin over the fluctuating masses was of normal color except when on the point of rupture. Fluctuating masses were never painful and rarely tender on pressure except around joints. The abscesses had a tendency to involve the deeper tissues and bone; new ones kept constantly appearing, frequently brought to notice only by the elevation of some portion of the skin. They contained from a drachm to many ounces of pus. The ulcers on knee and elbow had undermined edges, protruding granulations and were covered with a muco-purulent discharge.

Aspirated pus from abscesses was rather thick and coagulated into a gelatinous mass. Examined by Dr. Ophüls, it contained debris, pus cells and typical budding organisms of blastomycosis.

Antiforminized sputum, centrifugalized showed many blastomycetes to a field in all stages of budding.

On repeated examinations no tubercle bacilli were found.

Von Pirquet skin reaction was negative.

No organisms were recovered from the urine or feces.

Blood examination gave a negative Wassermann. Five blood cultures were negative for blastomycetes. The leukocytes varied from 10,000 to 16,000. Differential count showed a poly-morpho-nuclear increase. The hemoglobin was 50%; red cells, 3,500,000.

Peritoneal and subcutaneous injections of guinea pigs were negative; pus rubbed on denuded skin area gave no result.

There was the characteristic growth on all culture media in from five to fourteen days.

Treatment: Abscesses were treated by incising and swabbing with tincture of iodine. Iodide of potassium was given 250 grs. per day and X-ray exposures; extract of blastomycete was prepared by Dr. Hirschfelder and a few injections given.

Course: That of a chronic pyemia; mild, septic, temperature, progressive emaciation and loss of strength, numerous recurring abscesses involving skin, deeper tissues and bone. A painful nodule appeared in the left testicle.

Treated abscesses healed best under iodine but new ones constantly recurred. No effect was seen from iodides, X-rav, or extract.

The course in the hospital was six months' duration—from the initial symptoms approximately one year.

The autopsy was performed about twenty-four hours after death.

Anatomical Diagnosis: Systemic blastomycosis involving the skin, subcutaneous tissue, bones, lar-

ynx, lungs, kidneys, testicle and epididymis. Parenchymatous degeneration of the kidneys and liver.

The body is that of an extremely emaciated, poorly developed male apparently about thirty-five years of age. There is marked anemia and moderate cyanosis of the lips and finger tips. The pupils are equal and dilated; there is no jaundice. Scattered irregularly over the head, face and neck are numerous shallow ulcers with soft, undermined edges, and with rough bases which are covered with purulent material. Many of these lesions are covered with thick, dirty brown crusts which in some places project nearly a centimeter above the surface of the skin. When pressure is exerted over the skin in the region of the ulcers, a large amount of thick creamy pus exudes from beneath the undermined edges.

On the right side of the neck, immediately posterior to the sterno-cleido-mastoid muscle, is a large, irregular ulcer with deeply undermined edges. Similar lesions are situated over the left clavicle, in the left axilla, and on the arms, forearms and hands of both upper extremities. There is distinct limitation of movement of the right shoulder, and on the dorsal surface of the right wrist is widespread destruction of tissue which extends into and exposes the bone. Palpation of the wrist causes crepitation of the small bones, and there is a well-marked wrist drop. About the middle of the left forearm is a large, deep ulcer which extends into the bone and has denuded it for a considerable distance.

On the back, over both shoulders and over the sacrum are large fluctuating masses which are apparently immediately beneath the skin. At the side of the abscess over the sacrum is a small round opening from which a large amount of creamy pus escapes. In both axillæ and over the front of the chest on the left side are similar smaller fluctuating masses. The skin over these areas is quite thin and of a peculiar bluish tint.

The abdomen is retracted, and on the left side is a large, old scar, evidently from a burn, which extends over the crest of the ilium and on to the anterior surface of the thigh, causing a marked contracture of the thigh. The inguinal lymph nodes are distinctly enlarged, especially on the right side.

On both thighs are large subcutaneous abscesses in which is marked fluctuation, and on the outer surface of the left thigh is a large, shallow ulcer with deeply undermined edges. A probe is easily passed eight centimeters above the upper margin of the ulcer, and six centimeters below the lower margin, beneath apparently healthy skin. The left knee is markedly contracted and there is widespread ulceration over the anterior and lateral surfaces of the knee exposing the bone. Smaller ulcerations and abscesses are found over both legs and feet.

There is practically no subcutaneous fat over the chest and abdomen, and the muscles are dry and atrophic. A small subcutaneous abscess on the left side of the chest is found to be continuous with an opening in the third rib, through which pus escapes when pressure is applied.

There is a small amount of clear yellow fluid in the peritoneal cavity, the omentum is atrophic, and the gastro-colic omentum contains many enlarged lymph glands.

On removal of the sternum the anterior mediastinum appears normal. Both pleural cavities are obliterated by dense fibrous adhesions. The pericardial sac contains about twenty-five cc. of clear fluid. The heart is dilated but the valves and the coronary arteries are clear.

The left lung shows an old scar at the apex. The pleural surface is everywhere ragged from the adhesions. The peribronchial lymph nodes are not enlarged. The cut surface of the lung shows hyperaemia, especially in the lower lobe. The upper lobe is grayish in color, somewhat oedematous, and shows numerous small nodules, many of which are just visible to the naked eye.

The right lung was very firmly adherent in the basal portion and could not be separated except by cutting. The surface is everywhere covered by fibrous threads, and the whole lower lobe is extremely firm and shrunken. The peribronchial lymph nodes are enlarged and one of them shows a small calcified area about the size of a grain of wheat. The cut surface of the upper lobe is purplish in color and is studded with small tubercles similar to those in the left lung. The lower lobe is very dense and fibrotic, and is dark gray in color, with strands of dense, white fibrous tissue running irregularly through it. All resemblance to normal lung tissue is lost. In the central portion is a small cavity with ragged walls, and scattered throughout are many small white tubercle-like nodules.

The spleen is large and wrinkled (16 x 10 x 3½ cm.) and is rather soft. The adrenals are small and dark in color. The kidneys are rather small and smooth, and the capsules strip easily. The surface is purplish in color and the stellate veins are prominent. Scattered irregularly over the surface are small round grayish nodules about 2 mm. in diameter and extending about 2 mm. into the kidney substance. These spots are not caseous. On section the kidney substance is opaque and shows many small grayish areas similar to those on the surface.

The prostate and the bladder are apparently normal. The intestines are injected but show no lesions, and the Peyer's patches are not swollen. The mesenteric lymph nodes are distinctly larger than normal. The stomach shows no lesions.

The liver is small (25 x 20 x 7½) the surface smooth, and the gall bladder apparently normal. There are a few large lymph nodes in the hilus. the cut surface is moist, opaque and brown in color. No tubercles are seen.

The right testicle is apparently normal. The left shows complete obliteration of the sac of the tunica vaginalis, and the whole of the epididymis and fully one-third of the testicular tissue is replaced by a dense white fibrous tissue in which are many small nodules.

The aorta is apparently normal. The oesophagus, thyroid gland and the pharynx show no lesions. The deep cervical lymph nodes are slightly enlarged and some of them are anthracotic.

The larynx shows a number of small shallow ulcers along the margin of the right vocal cord, and when pressure is exerted over the outer surface of the thyroid cartilage, pus exudes through these ulcers into the larynx. No accumulation of pus was found on the outer surface of the thyroid cartilage.

The brain and meninges show no lesions.

Examination of the bones shows marked destruction of the upper end of the tibia and of the patella of the left knee, although the joint is apparently intact. There is marked destruction of the small bones of the right wrist. There is a large subperiosteal abscess over the anterior surface of the sacrum, causing destruction of the sacral vertebrae to a depth of over a centimeter. There are several subperiosteal abscesses on the inner surface of the ribs with deep destruction of the underlying bone. In two of these the erosion has extended completely through the bone, and continuity is established between the subperiosteal and a subcutaneous abscess. The cavity in the lower lobe of the right lung was directly continuous with such a subperiosteal abscess, and, through the erosion in the bone, with a large subcutaneous abscess in the right axilla. There is also deep destruction of the anterior surfaces of the seventh cervical and first and second dorsal vertebrae where a large abscess was found in the deeper tissues of the neck.

Smears taken from the pus from different parts

of the body showed numerous spherical, doubly-contoured bodies with granular protoplasm. All stages of reproduction by budding were seen in the fresh pus, and after the pus had stood in a warm place for a few days, hyphae could be seen growing from the spherical bodies. No tubercle bacilli or other bacteria were found in spite of careful search. Cultures made on the ordinary media showed beginning growth of the characteristic fungus in from four to five days.

Subcutaneous and intraperitoneal injections of guinea pigs, and intravenous injections of rabbits with an emulsion of the pus in normal saline solution, produced no visible lesions.

Microscopic examination of the lungs, skin, testis and deep tissues of the neck showed many small tubercle-like nodules consisting of epithelioid cells and containing multinuclear giant cells of the Langhans type. In many of the nodules and in some of the giant cells the characteristic budding yeast cells were found. No tubercle bacilli were found in any of the lesions. Sections of the epididymis showed areas of necrosis which somewhat resembled caseation, but in the skin and the lungs no caseation was found. Small abscess-like foci were found in the centres of many of the tubercles. There was no involvement of the lymph nodes.

Discussion.

Dr. Dickson: I believe that this case of systemic blastomycosis which has developed in California is of considerable interest in view of the fact that the relatively frequent systemic fungous infections in California have practically all been of the coccidioidal granuloma type. I have seen one other case of blastomycosis in California. The patient who was sent to Dr. Ophüls by Dr. Mudd of Merced complained of a large fungoid ulceration on the back of the wrist and hand extending over the thumb. He was a young man who had lived in Illinois, who, six months previously, had acquired a cough with a good deal of blood-stained sputum, and who at that time had had night sweats. No tubercle bacilli had ever been found in the sputum, but he was sent to California for "lung trouble." He rapidly improved after coming West, the lung symptoms disappeared entirely, and he gained rapidly in weight. A few months later he developed the lesions on the hand and wrist, and these proved to be due to blastomycosis. I have since been informed by Dr. Mudd that the patient died a few months after we saw him, and that autopsy showed a widespread involvement of the visceral organs and extreme destruction of the bones of the arm and of the vertebral column. There seems to be little doubt that this was a case of systemic blastomycosis which was acquired in Illinois and which showed temporary improvement after the removal to California.

The fact that the type of reproduction of the infecting organism in both these cases was identical with that described in the cases of blastomycosis in other parts of the country, and that it differed from the type of reproduction found in coccidioidal granuloma, shows that the two diseases are not due to the same infecting organism. Many authors have believed that this is the case, and Hyde has suggested that differences in climatic conditions in California might explain why the reproduction in the Californian oidiomycosis was always by endo-sporulation, while that in blastomycosis was by budding. The occurence of these two cases of typical blastomycosis in California provides strong evidence in favor of the conclusion that blastomycosis and coccidioidal granuloma, while closely related, are etiologically distinct.

* Read before the Forty-third Annual Meeting of the State Society, April, 1913, but publication delayed because the manuscript was mislaid in the Journal office.

A CASE OF VERONAL POISONING.*

By EDWARD SWIFT, M. D., Los Angeles.

The patient was a woman of 42 years. She had always been in good health, but was of a highly neurotic temperament. At 11 a. m. I was called to see her, though I had seen her the night before when she was apparently in perfect health but somewhat worried over some domestic troubles. I received the telephone call from her brother, who informed me that though his sister had gone to bed the previous night at 10 o'clock, she had as yet shown no evidence of awakening.

On examination I found the patient in coma from which it was impossible to awaken her; no response from pressure over supraorbital nerve. There was no cyanosis; pulse 60 and of good quality; temperature normal; respirations 22. I immediately washed out her stomach with warm water, after which six ounces of black coffee and one egg was administered through the tube. Normal salt was given per rectum by the drop method (two quarts at this time). When I saw her a few hours later she was in the same condition, though her respirations were slightly deeper. About 4 a. m. the following morning she became cyanotic, her breathing, which had gradually been getting deeper, became stertorous, her pulse weak and irregular, being intermittent at times. Her temperature still remained normal. Caffeine sodium benzoate in doses of gr. i and camphor and ether in doses of m. x were given for cardiac stimulation. This treatment only improved the pulse temporarily. Her respirations gradually became more and more stertorous, and by three in the afternoon she developed signs of pulmonary congestion. This gradually increased until there were signs of well marked edema of the lungs.

Her cyanosis gradually increased in spite of oxygen inhalations and hypodermic injections of atropine. Adrenalin was given without benefit. At 4 p. m. her stomach was washed out and the return consisted of brown fluid with a decided fecal odor, and containing some particles of fecal matter. There seemed to be a loss of tone of the intestinal tract, for enemas given were not expelled.

The patient died at 5 p. m. Just before death her temperature gradually increased to 105°, respirations developed into the Cheyne-Stokes type. Her pulse became weaker and weaker until it was imperceptible at the wrist. The function of the kidneys was lessened and in the last twenty-four hours of her life only two ounces of urine were to be obtained by catheter. Altogether she received one gallon of normal salt by the drop method, but this seemed to have no effect upon the secretion of urine. Hot packs and dry cups over the lungs were used, but nothing seemed to be of any avail.

On investigation it was found that she had taken one hundred (100) grains of veronal just prior to retiring for the night.

The following references may be of interest:

Sterling in the Australian Medical Journal, May 17, 1913, reports a case in which one hundred and twenty-five (125) grains were taken with recovery. Patient was found a few hours after taking.

* Read before the Los Angeles County Medical Society, January 15, 1914.

Chitty in the Lancet for March 29, 1913, cites a case in which 125 grains were taken with recovery.

Wilcox in the Lancet for October 25, 1913, has written a very complete article in which he says that the average minimal fatal dose may be considered as 50 grains; however, he says that death has occurred from doses of 15 grains. He reports ten cases which I cite very briefly:

Case 1. Female, age 27. Death in forty-eight hours; quantity unknown.

Case 2. Female, age 60. Death in eight hours. In this case morphine had been taken as well; quantity of veronal taken undetermined.

Case 3. Male, age 54. Death in two hours; twenty grains were taken, but patient had tabes and it is doubtful if drug caused death.

Case 4. Male, age 37. Death in seventy-eight hours; large dose taken but quantity not determined.

Case 5. Female, age 38. Death in thirteen hours; one hundred and twenty-five grains taken.

Case 6. Male, age 39. Death in eighty hours; quantity unknown.

Case 7. Female, age 42. Death in twenty hours; one hundred to one hundred and twenty-five grains taken.

Case 8. Male, age 56. In this case the patient fell twenty feet, suffered a fracture of the sternum and fracture of four ribs; veronal was given; patient died soon afterwards, and at autopsy edema of the lungs was present. Death probably not due to veronal.

Case 9. Male, age 62; fifty-three grains taken with recovery; patient in coma twenty-four hours.

Case 10. Male, age 28. Death in thirty-two hours; over seventy-five grains taken but exact quantity not known.

The results of postmortem examinations, according to Wilcox, are briefly as follows:

Cyanosis after death. There still may be blueness of fingers, lips and face. Marked dilatation of the heart more pronounced in right auricle and ventricle. The great veins are full of blood which is often fluid. The air passages are congested and contain mucous exudation. The lungs show hypostatic congestion and edema with areas of pneumonic consolidation. There are no characteristic changes in the stomach and intestines. The brain and abdominal viscera show marked congestion. The treatment recommended is briefly:

Wash out the stomach and "if patient is seen after six hours the poison will probably have passed on from the stomach into the intestines." Give coffee, milk and eggs through stomach tube. Give one ounce of castor oil. Cardiac stimulation with strychnine, digitalis, camphor and ether as indicated. Normal salt solution subcutaneously or by rectum. Should be given oxygen as indicated. If the patient shows evidences of remaining in coma, rectal feeding should be resorted to.

BOOK REVIEWS

Modern Medicine. By Sir William Osler, Bart., M. D., F. R. S., and Thomas McCrae, M. D. Vol. I.—Bacterial Diseases—Diseases of Doubtful or Unknown Etiology—Non-Bacterial Fungus Infections—The Mycoses. Publishers, Lea & Febiger, Philadelphia. $5.00.

Volume I of the second edition of Osler's "Modern Medicine" indicates that the rest of the series will be of unusually high character. This volume is well illustrated and while it contains a number of familiar plates, particularly those of Welch and Schamburg on Smallpox, nevertheless some new plates of commendable quality have been added. The article of McCrae on Typhoid is excellent and the treatment given is dependable. Poynton's contribution on Rheumatic Fever bringing in the more recent conceptions of this disease and indicating its bacterial nature is not only good but it will be found illuminating to anyone puzzled by the unusual clinical course of many patients. It is rather surprising in a work of this kind to see so little said of the use of the Roentgen-Ray in the diagnosis of tuberculosis with so much space given to the probably valuable but less important method of nitrogen gas injection into the pleural cavity. The chapter on Poliomyelitis is distinctly disappointing, giving a very meager idea of the modern conception of the disease, particularly of its abortive types. The splendid article of Councilman upon Smallpox is as good as can be found anywhere. In general, one can say that judging from the first volume the second edition will present all of the advantages of the first and have in addition, most of the new observations of value that have been presented within the last few years.

R. L. W.

"Meningococcus Meningitis." By Henry Heiman and Samuel Feldstein, with Introduction by Henry Koplik. Published by J. B. Lippincott & Company, Philadelphia and London. Price $2.50.

A careful summary of our present knowledge of this disease, based mainly upon a thorough study of the bibliography and upon the observation of a series of 75 cases under 13 years of age in the children's wards of Mt. Sinai Hospital, N. Y. Historical sketches precede several of the main divisions of the book. In discussing epidemiology the importance of healthy carriers is made clear and thus many of the odd ways in which this infection spreads are explained. Invasion occurs doubtless via the naso-pharynx. Thence the organism is probably carried to the meninges by the blood. The symptomatology is best described in dealing with children. With adults the clinical picture is less graphic than that in Sophian's recent monograph. The picture of posterior basic meningitis in infants, however, is excellent. In describing lumbar puncture several important points are clearly brought out, as follows: 1. During the puncture and for 15 minutes thereafter the patient should be closely watched by a competent medical assistant. Respiration may stop without warning; if so, artificial respiration should be started at once. 2. Serum should be injected by the gravity method, not by syringe. 3. General anesthesia is contraindicated save when the patient is otherwise uncontrollable. 4. After introduction of serum the buttocks should be elevated and foot of bed raised to facilitate diffusion of serum towards the head. 5. A clear spinal fluid does not rule out meningococcus meningitis. 25% of cases show clear or slightly opalescent fluid during the first 24 hours. 6. "Dry top" should not be reported until a second needle has been inserted in the next space and sterile saline passed in one needle and out the other, proving the needles to be patent and properly placed. Intraventricular puncture has been performed many times with no apparent ill effects, but so far without ultimate benefit.

H. S. F.

Materia Medica, Pharmacology, Therapeutics and Prescription Writing. For Students and Practitioners. By Walter A. Bastedo, Ph. G., M. D., Associate in Pharmacology and Therapeutics at Columbia University. Octavo of 602 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.50 net.

Bastedo's treatise is the latest American book

on pharmacology and therefore contains many facts not found in older works. It is written mainly from the clinical point of view and is really applied pharmacology. The applications of pharmacology to therapeutics are conservative and judicial, however there is considerable doubt whether a text-book on pharmacology should be written from the standpoint of practical clinical therapeutics and whether any presentation save from a strictly scientific point of view would encourage students to do independent work in this subject. The author has made numerous attempts to induce students to think logically, but too often statements are given dogmatically.

The chapter on alcohol is a well balanced presentation of the alcohol question and is well worth perusal. Most of the other chapters are unsatisfactory for the students of scientific pharmacology; thus the subject of Epinephrin is poorly presented and through an oversight the amino-group, to which epinephrin owes its activity, is omitted from the formula. One finds no mention of the investigation of Cannon and De La Paz, work which has opened up tremendous possibilities in the pathology of cardio-vascular diseases. The term epinephrin chloride has been used in place of hydrochloride. These terms suggest different chemical conditions. No mention is made of the depressor constituent of the pituitary gland or of the possibility that the activity of the pituitary gland may be due to several constituents. The active constituents of the anthracene purgatives is called emodin, whereas there are a number of emodins. Under anthelmentics there is no mention of the danger of using castor oil after male fern and under calomel no reference is made of the dangers of calomel insufflations when potassium iodide is being used internally. The description of the active principles of digitalis is not up-to-date. Under opium no consideration has been given to the synergistic action of the opium alkaloids and the author even states that the alkaloids of opium, save morphine and codeine have not been isolated. Under ergot, beta-iminazolylethylamine or ergamine is not mentioned and the author has used the trade name, tyramine, for paraoxyphenylethylamine, while our Pharmacopeia is endeavoring to discourage such usage. The recent work on lead poisoning by Legge and Goadby has not been considered. Objections can be urged against most of the chapters, no doubt because the author has endeavored to cover too many subjects—Materia Medica, Pharmacology, Therapeutics, Prescription Writing—in a limited space. The general practitioner can read this work with profit because of its attempt to rationalize therapeutics, but the book seems hardly satisfactory as a text-book of pharmacology, at least, for students in advanced medical schools.

A. C.

SOCIETY REPORT

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of January, the following meetings were held:

Medical Section, Tuesday, January 6th, 1914.

1. The Relation of the Employers' Liability Act to the Medical Profession. Will J. French, Industrial Accident Board. Discussed by M. R. Gibbons, Medical Director.

General Meeting, Tuesday, January 13th, 1914.

1. Roentgen Rays and Mesothorium in Gynocologic Practice; Report on their Application at Several German University Clinics. (Personal Observations.) Henry Kreutzmann.

2. Intraspinous Treatment of Syphilitic Disorders of the Central Nervous System (Swift & Ellis). Preliminary Report of Cases. P. K. Brown and W. T. Cummins.

Preliminary Report of Tabetic Cases. S. J. Gardner, W. B. Coffey and W. T. Cummins.

Surgical Section, Tuesday, January 20th, 1914.

1. Demonstrations:
   (a) Case of Osteoarthritis; (b) Case of Acute Arthritis. Harold Brunn.
   (c) Case of Coccidioidal Granuloma. W. I. Terry.
   (d) Case of Spinal Tumor. Howard Naffziger.
   (e) Arteriovenous Suture in a Dog. Sterling Bunnell.
   (f) Case of Strangulated Undescended Testicle (Specimen). H. B. A. Kugeler.

2. Madelung's Deformity, with Case Demonstration. Howard Adler.

3. Intracranial Pressure. Howard Naffziger. Discussed by H. B. A. Kugeler, Kaspar Pischel and O. Tobriner.

Eye, Ear, Nose and Throat Section.

January Meeting: Dr. H. Y. McNaught in the chair.

Two cases were shown by Kaspar Pischel: first, a case of old iritis in which the anterior lens capsule showed whirls of sulci like finger prints; Second, a case of legal importance. The patient claimed that he had always seen well with both eyes, but that the sight of the left eye was destroyed by a piece of steel. The sight in that eye is diminished to counting fingers in the upper field of vision only. The ophthalmoscopic examination does not show any sign of injury but a congenital malformation on the disc.

A case of large marginal corneal ulcer was shown by M. W. Fredrick.

Dr. G. P. Wintermute gave a lantern slide demonstration of the pathology of the ear.

Dr. H. Horn exhibited a healed double Killian and an acute mastoid which had been operated and had not healed. Dr. Horn assumed that the failure to heal was due to tuberculosis.

Dr. H. Y. McNaught exhibited a case of acute labyrinthine degeneration of unknown origin. There was a triple negative Wassermann in a 30-year-old woman and loss of perception for the forks and speech through air and tone coming in suddenly without dizziness. The examination was made two weeks after the original attack and at this time there was an after nystagmus on turning to the right of 35 sec. and on turning to the left of 10 sec. A week following this the after nystagmus was 10 sec. in either direction. The caloric nystagmus was present in either ear, but was sluggish.

Dr. H. B. Graham exhibited a case of tumor of the nose and orbits involving the middle third of the septum, the ethmoids and middle turbinates of both sides, the inner walls of the orbits and the orbital rim of both maxillary bones. There was exophthalmus, circular scotomata, slight papillitis and retinal hemorrhages in both eyes. The tumor was hard and in the nose presented a smooth, pale surface which bled easily. The X-Ray showed no encroachment on the cranial cavity. The diagnosis lay between osteoma, osteosarcoma and endothelioma.

Dr. Graham—Healed Jansen Frontal Sinus and Caldwell-Luc Antrum Case. The patient had been operated in Europe and America a number of times and treated by the usual washings over a period of five years. Dr. Graham removed the inferior wall of the frontal sinus through an external wound and succeeded in removing the whole of the mucous membrane of the sinus and antrum. Since the operation, four months previous, there had been no pus in the nose and but little watery secretion in the first few weeks. The external wound could scarcely be seen.

Dr. Graham—Healed tubercular mastoid and glands of the neck. Case three years of age

operated radically one year previously, Dr. Eaves doing the glands of the neck. At present a slight moisture at the eustachian tube which is not noticed by the mother, patient coming to the clinic once a month. The diagnosis was made clinically and pathologically by guinea pig inoculations and microscopical examination of the tissues of mastoid region and glands.

Dr. Graham—Ozena of the Larynx. Patient Silesian male 30 years of age with characteristic lesions of the nose, pharynx and larynx, the crusts extending well down into the trachea. The patient does not complain of any laryngeal trouble. A marked improvement was observed after a week's treatment with dionin.

Dr. Graham—Acute Shrinking of Perception for High Tones with Recovery. Patient male 40 years, healthy save for a long standing chronic tubotympanic catarrh of both ears. Was observed at three different times over a period of a week to have lost progressively the perception for the tones of the whole monochord and after a few weeks' rest from very exacting business completely recovered. The influence of nerve strain on the auditory apparatus was pointed out to be at times profound.

Dr. Graham—Disturbance of Hearing Due to Interference With the Plexus Tympanicus and Chorda Tympani. Patient, nurse with a calculus in Wharton's duct. The result was an intermittent enlargement of the submaxillary gland; eventual removal of the calculus. At the times of occlusion of the duct there was a feeling as though the ear was filled with water and patient would hear very badly on that side; there was a low-pitched ringing in this ear at these times. As soon as the occlusion was relieved these symptoms would all disappear. On removal of the calculus permanent relief. Dr. Graham pointed out that the submaxillary gland is supplied by the chorda tympani. The plexus tympanicus is connected with the 5th, 7th, 9th, 10th and 1st cervical. The tensor tympani and stapedius are supplied by the 5th and 7th and the rest of this nerve plexus is sensory, supplying the ligaments, articulations and membranes of the middle ear. That remote lesions in the line of these nerves are responisble for a large number of our ear symptoms has often been pointed out and Graham has no doubt that they are often overlooked by the specialist.

Dr. C. F. Welty. Luc-Caldwell operation. Dr. Welty left the inferior turbinate and claimed priority in the operation.

RESOLUTIONS ADOPTED BY LOS ANGELES.

1. RESOLUTIONS IN REGARD TO FEE TABLES OF WORKINGMEN'S COMPENSATION ACT.

Whereas, The State Industrial Commission, in order to carry out the provisions of the recently enacted Workingmen's Compensation Law of California, which is intended to safeguard the economic efficiency and prosperity of citizens engaged in industrial occupations, an object with which the ethical medical profession is in deep sympathy, as is evidenced by the service of its members in the past, in caring for many of the unfortunate sick without cost, in hospitals, dispensaries, and in private practice; and

Whereas, The State Industrial Commission of California, in order to carry out the provisions of the above law, has found it necessary to adopt a definite and fixed medical and surgical fee table in which minimum fees are enumerated, these fees being below those in general vogue among the ethical profession of this State; and

Whereas, The ethical medical profession has itself refrained from the adoption of arbitrary fee tables because it is difficult to make a fixed charge for services in the treatment of diseases and injuries, where the amount of skill and responsibility both required and given is a constantly varying factor, so that a fixed and arbitrary fee table could do injustice to both patient and physician; now therefore, be it

Resolved, By the Board of Councilors of the Los Angeles County Medical Association (an organization established in 1871, and having more than 600 ethical practitioners of medicine and surgery), that this Board, because of the above and other reasons, respectfully requests the California State Industrial Commission to pass a resolution and print on the fee table they have submitted, a statement to the effect that that Commission understands fully the difficulty and the inequality of an inelastic fee table for medical and surgical services, and that the minimum fees presented by the Commission are so made because of the limited resources of the State Industrial Insurance Fund, and because of the comparatively small financial income of the bulk of citizens whom the Industrial Law is especially intended to protect and benefit; and be it further

Resolved, That it is the opinion of the Board of Councilors that some such resolution or statement of record by the California State Industrial Commission, should be made by that honorable Commission, lest as time goes on, an injustice be done the very profession, which, above all others in the past, has borne the brunt of aiding and helping the unfortunate sick and injured of our commonwealth.

2. RESOLUTIONS REGARDING COMMERCIALIZATION OF MEDICAL AND SURGICAL SERVICES.

Whereas, In the opinion of the Board of Councilors of the Los Angeles County Medical Association, the California Casualty Insurance Board has presented a fee table for medical and surgical services that is not a fair compensation for skilled medical and surgical attention; and

Whereas, The State Industrial Commission has adopted a different fee table, which while not in itself in accord with the average prices for the services to be rendered, is however, permissible for the particular group of patients whom the State Industrial Act is intended to benefit, because the State must adopt a minimum definite fee table to avoid legal and financial complications; and

Whereas, If it is understood that there is no objection by the ethical medical profession to such a minimum fee schedule as that of the State Industrial Commission, if the Commission goes on record as the reasons for a schedule below the averages rightly due for skilled medical and surgical services; now, therefore, be it

Resolved, By the Board of Councilors of the Los Angeles County Medical Association, that this Board does not construe the performance of Medical and surgical services at such fees as unethical, provided that in the fees so received, the physician or surgeon shall receive his pay first hand from the State Industrial Commission, or from a Casualty Insurance Company, without the inter-

vention of an intermediary corporation or association seeking to make profit from commercializing these services of one or more physicians or surgeons, and sub-letting those services to insurance companies or other bodies; and be it further

Resolved, That the Board of Councilors will construe as unethical and as a violation of the Resolutions regarding Contract Practice, any members who sign contracts or perform surgical and medical services for secondary commercial associations intended to give aid to casualty cases, for fees less than those enumerated in the fee table of the Los Angeles County Medical Association, it being the opinion of this Board that such organizations are in essence not one whit different from the so-called "hospital associations"; and be it further

Resolved, That such cases of violation of these rules be construed as violation of the Rules on Contract Practice adopted on March 22, 1912.

MEDICAL CONTRACTING BY WHOLESALE.

The following proposed contract is published without comment and taken in connection with the list of those in the list of the Casualty Underwriters' Association, is sufficiently suggestive:

Agreement for Medical Service, under the Boynton Act, made by George W. Goodale, M. D., to ..... Company.

I, George W. Goodale, M. D., of San Francisco, California, hereby agree to furnish an organized staff of surgeons, located in logical industrial centers, and also a staff of consulting specialists for the purpose of treating medically and/or surgically, in accordance with the Medical Fee Schedule adopted by the Casualty Underwriters' Association of California and appended hereto (excepting the fee rate on X-ray work) any injured person sent to me, and for whose treatment the ..... Company is responsible or interested, and I agree not to incur any further expense without the consent of the said Company.

In any case not covered by this Medical Fee Schedule, I agree that a proportionate reduction of ordinary charges for such service shall be made.

As the above schedule makes no provision for a Dental Surgeon, I agree to draw up a special schedule of fees covering such services, and submit same to the Company for its approval. If approved, such special schedule shall be as binding upon me and my staff as if embodied in the Medical Fee Schedule of the Casualty Underwriters' Association of California.

X-Ray Work.

The fees for X-ray work are to be based on the following classifications:

1. Ordinary office work.
2. Ordinary hospital work.
3. X-ray taken at home, necessitating a portable machine.
4. Unusual cases, necessitating the use of the most powerful machines and the most skilled operators.

I agree to draw up a special schedule for such different classes of work, such schedule upon approval of the Company to be as binding upon me and my staff as if embodied in the Medical Fee Schedule of the Casualty Underwriters' Association of California.

SPECIAL AGREEMENTS.

Emergencies.

In the event that it is impossible for the injured employee in an emergency to obtain prompt attention from my staff of surgeons, I hereby agree, if another surgeon is called, to pay the difference between the regular fee and the amount charged by such other surgeon. This agreement to apply to first aid treatment only.

Hospitals.

I agree if desired to obtain for the Company hospital rates and to use, after consultation with the Company, the hospitals which for price, efficient service, and locality, appear to be most fitting.

Ambulance Service.

I agree if desired to obtain for the Company ambulance and taxicab rates.

Drug Stores.

I agree to obtain for the Company a special rate of about thirty-five (35) cents a prescription from drug stores selected for quality and location. A special form of prescription blank will be used, sample of which is appended hereto.

Surgical Supplies.

I agree to obtain for the Company, special rates of discount on surgical supplies and apparatus from both surgical supply houses and drug stores.

Reports.

I agree to have printed and use reports of medical aid to injured employees. Copies of reports appended hereto. Or, if desired, will use reports furnished by the Company.

Medical Service Order.

I agree to furnish Medical Service Order Books, sample of which is appended hereto.

Industrial Accident Board.

I agree that all surgical and medical treatment will be such as to meet with the approval of the Industrial Accident Board.

Attitude Toward Employees.

I agree to instruct my staff to show to the injured employees sent to them for treatment the same attention and courtesy as is shown to their private patients.

Medical Advisor.

I agree to act as an advisor to the Company in all matters relating to compensation and the Industrial Accident Board.

Payments.

I agree to file a final report of medical service rendered in each case, this report to serve as a bill on the Company for service rendered.

I agree to maintain the number of offices and surgeons in San Francisco and elsewhere as stated in the "List of Offices and Surgeons" appended hereto. I further agree to add to my list of surgeons, as printed in the Medical Order Book, the name of any surgeon the Company may desire. However, I am not to be held responsible for the payment of his services nor for the character of his work.

THE CASUALTY INSURANCE ADJUSTERS' ASSOCIATION OF CALIFORNIA.

533 Merchants' Exchange Building.
San Francisco, Cal., February 2, 1914.

To Members:

Re: Doctors and Hospitals.

Supplementing my previous circular letters, the following doctors have signed the Medical Fee Schedule, in addition to those already noted:

Frankfort Co., **M. O. Austin,** 16th and Mission Sts., San Francisco.

Royal Co., **P. Campiche,** 381 Bush St., San Francisco.

Frankfort Co., **W. H. Harrison,** 42 Market St., San Francisco.

A. H. McNulty, Phelan Bldg., San Francisco.

Frankfort Co., W. Peters, 1402 18th St., San Francisco.

Pac. Coast Cas. Co., **Shelby P. Strange,** 728 Eighth Ave., San Francisco.—(After Feb. 15, 1914, Benicia, Cal.)

Maryland Cas. Co., **Wilhelm Waldeyer,** 350 Post St., San Francisco.

Pac. Coast Cas. Co., Walter J. M. Williams, 310 Columbus Ave., San Francisco.

T. B. Holmes, 1501 23rd Ave., Oakland.
Mass. Bonding Co., Wm. W. Kergan, 1225 Washington St., Oakland.
Fidelity & Dep. Co., **J. H. Sampson,** 577 14th St., Oakland.
Fidelity & Dep. Co., **R. T. Sutherland,** 1215 E. 14th St., Oakland.
Frankfort Co., **Robert Hector,** 2131 University Ave., Berkeley.
Frankfort Co., F. H. Van Tassell, 2982 Adeline St., Berkeley.
Frankfort Co., J. F. Diddle, 2719 San Pablo Ave., West Berkeley.
Employers' Co., J. Plandbold, Kennett.
Royal Co., **J. A. Copeland,** McFarland.
Royal Co., **Rae Felt** (Sequoia Hotel), Eureka.
Royal Co., **Lloyd Bryan,** (Sequoia Hotel), Eureka.
Frankfort Co., H. N. Taylor, Maricopa.
F. & Casualty Co., **J. D. Dameron,** (Dameron Hospital), Stockton.
F. & Casualty Co., **S. F. Priestley,** Elks' Building, Stockton.
Employers' Co., Fred W. Watt, Morgan Hill.
Employers' Co., **A. L. Weber,** Cucamonga.
U. S. Cas. Co., **J. Walter Key,** Taft.
F. & Deposit Co., **F. E. Shaw,** 9th and K Sts., Sacramento.
F. & Deposit Co., Jas. T. Affleck, 203-4 Bryte Bldg., Sacramento.
Frankfort Co., **Ralph W. Avery,** 339 N. 5th St., Oxnard.
Frankfort Co., **W. E. Cunningham,** 607 Macdonald Ave., Richmond.
Royal Co., **Fred J. Crease,** 1916 Chester Ave., Bakersfield.
Frankfort Co., Chas. F. Nelson, 732-3 Los Ang. Investment Bldg., L. A.
U. S. Fid. & Guar. Co., Fred H. Nelson, 610-11 Hibernian Bldg., Los Angeles.
U. S. Fid. & Guar. Co., Edwin Gillman Goodrich, 3759 Maple St., Los Angeles.
U. S. Fid. & Guar. Co., W. Frank Holman, 800 Los. Ang. Inv. Bldg., Los Angeles.
Frankfort Co., Roy L. Buffum, 415 Nat. Bk. Bldg., Long Beach.
Royal Co., **Edward N. C. Mann,** 810 Timken Bldg., San Diego.
Hellganz, Wistrand, Fisher, Hayes, Wilson, Phillips, Vella, Ayer, Bower, Vanatta, Coen.
Frankfort Co., J. G. Harrington, 635 Shotwell St., San Francisco.
Frankfort Co., J. W. Jones, 2131 University St., Berkeley.
Frankfort Co., **J. Edson Kelsey,** Acheson Building, Berkeley.
Frankfort Co., **F. R. Woolsey,** 2244 Dwight Way, Berkeley.
F. & Deposit Co., **J. S. Green,** 507-8 Security Bank Bldg., Oakland.
F. & Deposit Co., **J. Louis Lohse,** Dalziel Building, Oakland.
U. S. Cas. Co., **W. C. Chidester,** 207 Second Ave., San Mateo.
Mass. Bonding Co., **W. A. Phillips,** Brookdale.
Employers' Co., **David A. Conrad,** 1109 State St., Santa Barbara.
Employers' Co., F. E. Pagett, Main Street, Windsor.
Employers' Co., E. G. Lewis, Escalon.
F. & Cas. Co., J. H. Adams, Crockett.
Employers' Co., J. T. Wrenn, Placerville.
Frankfort Co., **S. H. Rantz** (Hospital),* Placerville.
Frankfort Co., **W. A. Reckers,** (Hospital),* Placerville.
Globe Co., G. L. Lynch, Amador City.
Globe Co., P. S. Goodman, Main and Randolph Sts., Sutter Creek.
Globe Co., **Edwin Eugene Endicott,** 21 Stacel Ave., Jackson.
Frankfort Co., L. A. Perce, Bixby Hartwell Bldg., Long Beach.
Frankfort Co., Oran Newton, Bixby Hartwell Bldg., Long Beach.
Fidelity & Cas. Co., E. Ward Couper, 3301 Mission St., San Francisco.
Maryland Cas. Co., **Arthur L. Fisher,** 126 Stockton St., San Francisco.
Frankfort Co., M. B. Mooslin, 1811 Fillmore St., San Francisco.
Fidelity & Cas. Co., **John K. Plincz,** 916 Kearny St., San Francisco.
U. S. Fidel. & Guar. Co., **Brandley Plymire,** 948 Market St., San Francisco.
Fidelity & Cas. Co., N. H. Prusch, Pacific Bldg., San Francisco.
U. S. Fidel. & Guar. Co., **Thos. C. Shumate,** 86 Post St., San Francisco.
Maryland Cas. Co., V. C. Thomas, 830 Market St., San Francisco.
Royal Indemnity Co., C. H. Wilder, E. 14th and 10th Ave., Oakland.
New Amsterdam Co., **Howard Cameron,** 824 J. St., Sacramento.
Royal Indemnity Co., A. F. Higgins, 719½ K St., Sacramento.
Employers' Co., **C. L. Six,** Wallace Bldg., Stockton.
Employers' Co., **Edw. E. Baumeister,** 336 Broadway, Chico.
Employers' Co., **Laurence Welti,** Behlow Bldg., Napa.
Employers' Co., H. I. Merritt, 19 N. Central Ave., Campbell.
Employers' Co., C. E. Read, Redding.
Employers' Co., **R. H. Ashby,** 114 Lincoln St., Roseville.
Fidelity & Cas. Co., Blake Franklin, Jackson.
Employers' Co., H. R. Chesbro, Gilroy.
Employers' Co., **S. C. Rodgers,** 107 E. 3d St., Watsonville.
Fidelity & Cas. Co., **M. J. Gates,** 116½ Pacific Ave., Santa Cruz.
Mass. Bonding Co., **P. J. Cuneo,** Hotel Metropole, E. Bakersfield.
Frankfort Co., **Homer Rogers,** 1831 Chester Ave., Bakersfield.
Mass. Bonding Co., **Geo. Sabichi,** 1620 17th St., Bakersfield.
Employers' Co., **W. J. Blevins,** 1st Nat. Bank Bldg., Woodland.
London Guarantee Co., Norman A. Leake, 21807 Andreo St., Torrence (L. A).
Employers' Co., B. Kaufman, 404 D. St., Marysville.
Employers' Co., Edward A. Diggins, Antioch.
Globe Indemnity Co., **J. Wallace DeWitt,** Antioch.
Fidelity & Dep. Co., Eugene S. May, 626 Dalziel Bldg., Oakland.
Fidelity & Dep. Co., **Austin F. Clarke,** Oakland Bank of Sav. Bldg., Oakland.
Fidelity & Dep. Co., **A. S. Kelly,** 1st Nat. Bank Bldg., Oakland.
Employers' Co., **Allen R. Howard,** 17-18 Dougherty-Shea Bldg., Santa Rosa.
Royal Indemnity Co., **Jackson Temple,** Sec'y. S. Rosa Hospital, Santa Rosa.
Royal Indemnity Co., **J. W. Scammell,** Pres. S. Rosa Hospital, Santa Rosa.
London Guarantee Co., D. D. Whedon, 208 U. S. Grant Bldg., San Diego.
Employers' Co., B. Caldwell, B St., Biggs.
Royal Indemnity Co., Dr. Tapley, Marysville.
Employers' Co., **Ergo W. Majors,** 532 15th St., Oakland.
Mass. Bonding Co., Geo. H. Derrick, Pacific Bldg., 16th and Jefferson Sts., Oakland.
Employers' Co., **C. B. Jones,** 1021 10th St., Sacramento.
Employers' Co., **Floyd E. R. Burks,** 126 Forsyth Bldg., Fresno.
Employers' Co., Chas. H. Walter, Porter Bldg., San Jose.
New Amsterdam Co., Wallace E. Parkman, 1st Nat. Bank Bldg., San Jose.

Frankfort Co., **P. T. Phillips,** Higher Bldg., Santa Cruz.

Globe Co., **Louis Clive Jacobs,** 1615 Polk St., San Francisco.

Maryland Cas. Co., **T. W. Connolly,** Hearst Bldg., San Francisco.

London Guarantee Co., **A. U. Fuson,** 2580 Mission St., San Francisco.

Frankfort Co., D. G. Bennett, 2090 Devisadero St., San Francisco.

Employers' Co., Roland E. Hartley, 391 Sutter St., San Francisco.

Frankfort Co., G. W. Goodale, 1708 Hyde St., San Francisco.

U. S. Casualty Co., **Albert Cohen,** 146 Grant Ave., San Francisco.

Royal Indemnity Co., **F. W. Ross,** 86 Post St., San Francisco.

Royal Indemnity Co., **Chas. W. Card,** 162 32d Ave., San Francisco.

Royal Indemnity Co., **A. Berg,** 1462 Devisidero St., San Francisco.

New Amsterdam Co., W. H. Heinzmann, 146 Grant Ave., San Francisco.

Fidelity & Deposit Co., **John R. Clark,** 86 Post St., San Francisco.

Frankfort Co., Edgar H. Howell, 209 Post St., San Francisco.

Fidelity & Deposit Co., **Alex. S. Keenan,** 16th and Mission Sts., San Francisco.

Fidelity & Cas. Co., **Francis F. Knorp,** Butler Bldg., San Francisco.

London Guarantee Co.,

Fidelity & Dep. Co., **L. D. Mead,** 135 Stockton St., San Francisco.

Frankfort, Royal and London Guarantee Cos., **James F. Pressley,** 246 Powell St., San Francisco.

Frankfort Co., **J. A. Simpson,** 638 20th St., San Francisco.

Frankfort Co., Richard F. Tomlinson, 126 Stockton St., San Francisco.

Frankfort Co., **W. H. Irwin,** 1st Nat. Bank Bldg., Oakland.

Frankfort Co., **A. F. Maine,** 532 15th St., Oakland.

Mass. Bonding Co., John Purvis, 577 14th St., Oakland.

Fidelity & Dep. Co., **Dudley Smith,** 1st Nat. Bank Bldg., Oakland.

Employers' Co., **C. L. and A. S. Abbott,** Bank of Rich. Bldg., Richmond.

Mass. Bonding Co., **A. F. Cowden,** Higher Bldg., Santa Cruz.

New Amsterdam Co., W. T. Burks, Land Co. Bldg., Fresno.

Frankfort Co., **Elgar Reed,** 6th and D Sts., Chico.

The San Rafael Sanatorium quotes the following rates:

Mass. Bonding Co.—

$15.00 per week, ward rate.
5.00 flat rate for use of operating room.
5.00 X-ray plates.

Note:—Above rate does not include surgical dressings.

St. Joseph's Home, Stockton, Cal., quotes the following rates:

Fidelity & Cas. Co.—

$10.50 per week, including bed, board, linen and attendance in ward.
10.00 operating room—major.
5.00 operating room—minor.
(Not including dressings nor laundry.)

Dameron Hospital, Stockton, Cal., quotes the following rates:

Fidelity & Cas. Co.—

$14.00 per week, ward services, including bed, board, bath, linen and attendance.
5.00 use of operating room, including major and minor operations.
No charge made for medicines, excepting general tonics or special medicines.
17.50 per week for private rooms.

Dr. F. W. Ross, 86 Post St., San Francisco, Dr. G. W. Goodale, Phelan Bldg. (phone Sutter 2154), San Francisco, make the following charges for **X-ray plates:**

$4.00 one plate.
6.00 two plates.

The X-ray machine cannot be used in houses where there is no electricity.

• The Placerville Hospital offers a rate of $12.50 per week, including general care. Special nurse, regular rate extra.

THE LATE E. L. B. GODFREY, M. D.

A committee of the Los Angeles County Medical Association appointed to draw up resolutions upon the death of Dr. E. L. B. Godfrey, desires to offer the following:

Whereas, by the death of Dr. E. L. B. Godfrey, formerly president of the State Board of Medical Examiners and Assistant Surgeon of New Jersey, but resident of California since 1910, the medical profession in general and that of Los Angeles county in particular has experienced a great loss; therefore, be it

Resolved, That the sincere condolences of his colleagues of the Los Angeles County Medical Association be tendered to his widow and to his relatives, and that a copy of these resolutions be sent to the California State Journal of Medicine for publication.

CHARLES LEWIS ALLEN, M. D.,
Chairman.

NEW MEMBERS.

Ryan, Russell C., San Francisco.
Ely, Leonard W., San Francisco.
Lippman, Caro W., San Francisco.
Dixon, R. E., Hanford, Cal.
Nicholson, J. W., Fresno.
Forrest, R. A., Occidental.
Reeves, Wm. Pollin, Spreckels.
Dufficy, Rafael Gabriel, San Rafael, Cal.
Slabaugh, Warren H., Wilmington, Cal.
Cooke, A. B., Los Angeles.
Kern, A. B., Los Angeles.
Dunsmoor, Robt. M., Los Angeles.
Brandel, Harry M., Los Angeles.
Mabry, Wm. C., Tropico, Calif.
Jacobs, Edw. H., Los Angeles.
Wilson, Jno. C., Los Angeles.
Mackenzie, Wilbur W.

RESIGNED.

Newton, Frances Louise, Woodland, Cal.

DEATHS.

Stratton, Jno. A., Newman, Cal.
Baer, J. S., So. Pasadena.
Healy, Jas.—In addresses unknown (died in San Francisco).
Nott, J. R., Lakeport, Cal.
McGowan, Julia N. Moss, Monterey, Cal.
Lilley, J. F.—In addresses unknown (died in Mexico).
Huntoon, Alonzo F., Los Angeles.
Coyner, Jos. W., La Jolla, Cal.